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RICHARD P. ROTHWELL, C. E., M. E., Editor.

ROSSITER W. RAYMOND, Ph. D., M. E., Special Contributor.

SOPHIA BRAEUNLICH, Business Manager.

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CONTENTS.

	Page.
Cheap Money	25
The Clausthal Library	25
The Mesaba Iron Range	25
American Students in German Mining Schools	25
The Free Silver Agitation	25
The Reading Receivers	25
Nickel-Steel and Canadian Nickel	26
Hydraulic Mining in California	26
The Mining of Silver and the Appreciation of Gold	26
New Publications	27
Books Received	28
The Metallurgy of Nickel.....R. M. Thompson	28
"The Mineral Industry" for 1892	28
Bi-Metal Money—A Solution of the Silver Question .....Wm. Kent	28
Reduction of Metallic Oxides by Silicon...W. H. Greene and W. H. Wahl	29
*Mining at the Columbian Exposition	29
Abstracts of Official Reports	31
The Oldest Copper Mine	32
*A Florida Phosphate Mine	33
The Penobscot Mine and Mill, Montana.....H. M. Beadle	33
*Coxe's Furnace for Burning Fine Coal	34
*The Huseman Concentrator	35
Recent Decisions Affecting the Mining Industry	35
Patents Published in Great Britain	35
Personals, Obituaries, Societies, Technical Schools, Industrial Notes	36

Notes: Aluminum in Mines, 29—Iron in Korea, 33—Unique Bequest to Yale College, 35—Cheap Smelting, 35—Railroads to the New Mining Fields of South Africa, 35.

*Illustrated.

MINING NEWS.		FOREIGN.		MARKETS:			
Alabama	37	Colombia	39	METALS	41	San Francisco.	43
Alaska	37	Ontario	40			Coal Stocks	;
Arkansas	37	Queensland	40	IRON:		Colo. Springs	;
California	37	Spain	40	New York	42	Rico	48
Colorado	37	South Africa	40	Chicago	42	Baltimore	48
Florida	38			Louisville	43	London	48
Georgia	38	Colorado Ore Market	40	Philadelphia	43	Paris	48
Idaho	38			Pittsburg	43	Aspen	48
Kansas	38	MINING STOCK MARKETS:		COAL:		St. Louis	48
Maine	38			New York	43	Duluth	48
Michigan	38	New York	40	Boston	44	Denver	48
Minnesota	38	Boston	40	Buffalo	44	CHEMICALS AND MINERALS	45
Montana	38	San Francisco.	40	Chicago	44		
Nevada	38	London	40	Pittsburg	44	CURRENT PRICES:	
New Mexico	39					Chemicals	45
Ohio	39	DIVIDENDS	41	MINING STOCK TABLES:		Minerals	45
Pennsylvania	39	MEETINGS	41	New York	46	Rarer Metals.	45
Utah	39	ASSESSMENTS	48	Boston	46	ADVT. INDEX	19
Washington	39						
West Virginia	39						

IF it is cheap and abundant money that the present advocates of free coinage want let each one of them issue his own notes to any extent he wishes, but not call on the whole country to bankrupt itself that he may have cheap money in which to pay his debts.

ONE of the objects of historical interest in the library of the Royal Academy at Clausthal, in the Harz, is a set of books in which visitors to the famous Dorothea Mine have inscribed their names. Here may be seen the signatures of Goethe, Heine and Humboldt, together with those of many others renowned in science and literature, and numerous royal personages. The library, which includes some 20,000 volumes of a technical nature, possesses an excellent copy of Agricola's "De Re Metallica," edition of 1546, and a number of ancient maps and other relics of early mining operations in the Harz.

THE general financial disturbance and the low prices of iron ore have proved embarrassing to many of those who were attracted last year to the new Mesaba iron range in Minnesota, by the fact that its deposits could be made available with but little and inexpensive preliminary work. Where marketable iron ore could be stripped and excavated with a steam shovel, the opportunities for explorers with small capital seemed good, and induced these to pay or promise to pay exorbitant royalties to the landowner. A single prosperous season would have established many of these miners and enabled them to go on; but the hard times came too soon and are driving them out and concentrating the ownership of the range in stronger hands. The capitalists who have taken up large tracts are, it is said, increasing their holdings and preparing to ship on an extensive scale when the ore market revives.

FEWER students go from the United States to the Mining Academies of Germany now than formerly, when we had no mining schools, or two or three only which were young and unknown. At present our schools in Boston, New York, Bethlehem and St. Louis are at least of equal rank with the best of Europe; in the opinion of many they are better, but this is a question of system rather than of quality. Nevertheless there are many Americans who go to Freiberg, Clausthal and Berlin to study. During the present semester there are about 180 students at the mining academy at Freiberg, about 130 at Clausthal and about 130 at Berlin. Nearly one-half the students at Freiberg are foreigners and some 30 of them are English and Americans. At Freiberg the name of Ledebur, who holds the chair of iron and steel metallurgy, is the great attraction. The proportion of foreign students at the two Prussian schools, Berlin and Clausthal, is large, but the number of Americans is small, Clausthal having two or three only.

THOSE who desire to see bimetallism established and the total and sudden demonetization of silver throughout the entire world prevented, should unite at once in denouncing, and, if possible, stopping the insane agitation of free silver coinage in the West. Every day this lasts it injures the prospects of arriving at some rational, business-like international agreement for bimetallism. And there is surely no sane man who believes that this country can alone make a business success of free silver coinage, which every other country in the world has had and abandoned, or is earnestly seeking to abandon. The United States are not going to chain themselves as slaves to the chariot wheels of the gold countries, and the advocate of free coinage to-day is helping to do this. The way to help silver and to bring about most promptly an international bimetallism on a flexible ratio is for the United States to stop at once buying silver and commence buying gold heavily. Let us endeavor to buy $100,000,000 of gold in the next twelve months, and long before its expiration all Europe will be ready to adopt bimetallism. The free coinage advocates would make of this country the world's dumping ground for silver and allow all our gold to go to Europe to establish it more firmly on the gold basis and then expect them to help us out of the hole we had jumped into to allow them to climb out on our shoulders.

THE action of the Court in authorizing the Philadelphia & Reading Receivers to issue certificates to the amount of $3,743,000 will relieve, for the present, the most pressing necessities of the management and will probably enable the receivers to continue smoothly for a time. The company defaulted on the July interest on the general mortgage bonds, a proceeding which has been practically announced beforehand, although some had held all along to the belief that the default was merely a threat to bring the bondholders into the plan of reorganization. Some temporary relief also has been obtained by the extension of a part of the SPEYER loan, $500,000 having been paid and $2,500,000 extended for the present. The new receiver's certificates, as authorized, will bear 6 per cent. interest and according to custom and precedent will be a lien on the property, or at least on its earnings, ahead of all the other securities of the company, a fact which can hardly be agreeable to the bondholders, although it was, perhaps, unavoidable under present circumstances.

The company has defaulted on the securities of the Pennsylvania,

Poughkeepsie & Boston road, which is part of the Poughkeepsie Bridge line, about which and the New England connections we heard so much a year or so ago. This action would seem to indicate that Mr. HARRIS has hardly as high an opinion of the value of this New England line as his predecessor had, in which, perhaps, many other people will be inclined to agree with him.

IN another column will be found some criticism of the statements of the MINERAL INDUSTRY concerning the early use of nickel from Canadian ores in the manufacture of nickel-steel. The fact there stated, however, that the nickel from the Sudbury mines is used both in America and Europe for the manufacture of nickel-steel, from which the successful armor-plates have been made, simply emphasizes the fact, also stated in the book, that the Orford Copper Company has dissipated the cloud which had hung over Algoma nickel by producing from the Sudbury ore a nickel oxide almost absolutely free from the objectionable impurities.

The statement is made by another correspondent that the Orford process for refining nickel has long been employed at the Vivian Works in Swansea, Wales. We would point out that even if this were, in all respects, the case it would be a kind of poetic justice that those who make a secret of the process should not get credit for inventing it, but that those who first make it known for the benefit of mankind should receive the honors. In this case it is not so much the use of salt cake as a flux that is claimed as the important point, even though that might, in the absence of publicity by the VIVIANS, have been worked out independently at the Orford establishment, but it is its continued application to the point of making a dry process that seems the important feature. We trust that the very able metallurgists of the famous works of the VIVIANS will now tell us all about this process; how and when it was introduced, and how it is at present worked. We will take the greatest pleasure in securing for them the full credit to which they are entitled for many great improvements in metallurgy, some of which may still be kept secret at their works.

HYDRAULIC MINING IN CALIFORNIA.

The financial stress felt throughout the country is just now causing in California a pronounced feeling in favor of the resumption of hydraulic mining. Many men not in any way identified with mining enterprises see in the early resumption of this work a way to relieve to some extent the financial difficulties. For this reason alone many who hitherto have had little to say either for or against this form of mining are now warm advocates of its resumption. It is interesting to note in this connection the various amounts of money that have been expended in the effort to stop hydraulic mining. Sacramento County's contribution headed the list with $80,000; Sutter followed with $75,000; Yuba, $65,000; San Joaquin, $10,000; Yolo, $10,000; Colusa, $10,000, and Butte, $4,000; making in all $254,000, or, with the $100,000 contributed by private individuals and the Congressional grant of $50,000, a total of $394,000. The reaction in public sentiment has set in, however, and the feeling that the policy followed to date has not been the most wise is gaining strength.

Unfortunately, under the Caminetti Act, the Débris Commission is heavily handicapped. The working of the act is bound to be so cumbersome that from the time of filing an application to mine until permission is given months will elapse even when all things are favorable. The time required to complete the necessary preliminaries before reopening a mine may be figured out as follows: The preliminary consideration of the petition, about 7 days; application to the Secretary of War to advertise abstract of petition, 15 days; time for advertising, 21 days; visit to mine pending publication, hearing and deliberation, 30 days; examination of plans and specifications, 20 days; second examination of mine, 10 days; third examination of mine after works are constructed and before final license is issued, 10 days; in all 113 days will be consumed without counting the time necessary for constructing restraining works which, however, may be going on in the meantime. If any contest or contention arises to complicate the matter the time may be extended indefinitely. Furthermore the Débris Commission cannot devote the whole of its time to the mining question. The members are all engaged in their regular duties as engineers on river and harbor improvements, and only a part of their time can be given to the work of the commission, so that delays in meeting must be sometimes unavoidable, and it may easily happen that six months or even a year will intervene before a license can be issued to an applicant.

While there is no desire to question the ability of the engineer officers who form the commission, or their desire to perform their duties properly, it has always seemed to us a serious defect in the law that it did not provide for the appointment of at least one practical hydraulic miner as a member of the commission. In the course of its work questions must arise in deciding which the experience of such a member would be of the greatest service to all the parties concerned, and probably the engineers who now have the work in hand would be the first to appreciate and welcome the assistance of such a colleague.

"THE MINING OF SILVER" AND THE APPRECIATION OF GOLD.

The New York *Evening Post* is an admirable paper, well edited, sound in its views on most subjects, elevated in its tone, and it exercises, as it deserves to do, great influence, which is steadily increasing with the advance in our civilization, to which it largely contributes.

We have been accustomed to accept with more or less unquestioning confidence its statements concerning international law, politics, the baseness of Tammany and other subjects in which we are not experts, but when our guide enunciates pure nonsense concerning subjects in which we are practically experienced, and does it with its customary dictatorial assumption of superior wisdom, we confess our childlike faith receives a very severe shock, and we begin to have our doubts about its omniscience and infallibity in those other matters. There is nothing more painful than the rooting up of our faith in those we have trusted; could it not have spared us this awakening?

In its issue of July 1st the *Evening Post* discussed editorially "The Mining of Silver," and said among other things: "No one ought to expect that any one nation or union of nations would go on indefinitely creating an artificial demand for silver;" yet it advises this nation and all other nations to "go on indefinitely creating an artificial demand for" gold, which is, to say the least, inconsistent. With the greatest assumption of knowledge it says:

"As in the case of other protected articles, the method of producing silver has been and is yet wasteful. The Miners' Union is one of the strongest of labor organizations and has been the most successful in obtaining extravagant wages and in mercilessly exacting concessions from the employers. In these demands its position was logical. If the Federal Government was using all its power and crippling trade in order to give an arbitrarily high price to the mine companies, why should not the operatives share in the stolen prosperity by exacting arbitrarily high wages? If the support of the United States should be withdrawn, this argument would fall to the ground; so that in time the men would find themselves obliged to accept the rate of pay current in their localities or lose their work. Then, again, the favor of the government has paralyzed improvement. Perhaps in no other line of manufacturing has so little advance been made. The energies which should have been employed in devising cheaper methods have been engaged in getting the nation to buy the product at an artificial price. What difference could it make to a mining company if ore was being carried to the railroad in wheelbarrows or by horse-power instead of by steam, provided a profit over the extravagant cost was assured at the expense of the nation at large? There is good professional authority for saying that the cost of silver mining could and would be greatly reduced, though gradually, if the industry were left to depend upon commercial conditions like other industries, and could feel the steady pressure toward improvement in machinery and methods which other business companies know so well. Invention would be stimulated where until now no necessity has existed, and freights would fall as the value of ore declined. At last the price limit of silver would be reached and the business would become normal.

"Some authorities put this price limit of silver at about fifty cents per ounce. At this quotation it is supposed that the older and more expensive mines with low-grade ore will stop or be refitted, so that output and natural consumption will be approximately equal. For a large portion of the output, silver is a by-product, and will continue to be produced so long as a profit can be made on the main product—such as copper. There is public evidence enough to warrant the belief that, under improved mining, silver in sufficient quantities for all uses could be produced with a profit at about the price just given. Yet this profit cannot be obtained until the whole business of silver mining is put upon a modern basis; every plan for cheapening production must be resorted to, and to this end mining companies with larger capital must be formed, so that every offered improvement can be utilized. The present alternative before the mine-owners is this: If things go on as now, the price continuing low while still the hope of Federal favor leads the companies to look to a government instead of a legitimate commercial market for their profit, then nothing but disaster awaits silver mining; if, on the contrary, hope of government favor be abandoned and the methods of mining be brought into line with other departments of trade and manufacturing, then after a period of confusion silver mining will take its place as an American industry, paying fair profits through good business operations."

These statements are sheer nonsense, that even a very little knowledge of the industry would have prevented.

The facts are that the "mining" of silver ores (by which is clearly intended both mining and metallurgical operations) is carried on precisely like the mining of gold. Enormous improvements have been made in the machinery used in mining, hoisting, transporting and other handling of silver bearing ores, greater improvements in fact than in the mining of gold, as might be expected, because the quantities handled are greater and will pay to use expensive machinery, while in most gold mines with small quantities it does not pay to put in an expensive plant. To put in a costly steam engine to do what a span of mules or a wheelbarrow would do cheaper is certainly not an "improvement" or an economy.

In metallurgy very great progress has been made of late years; the cost of smelting and treating dry silver ores has been reduced to much less than one-half of what it was in the years before "the favor of the government" in buying silver "paralyzed improvement."

Silver mining and metallurgy are more advanced, more "improved," more economical in the United States than in any other country in the world, with the possible exception of the treatment of certain ores in Mexico, where the low wages may offset our more improved practice.

The *Evening Post* seems to forget that, with the adoption of improvements which have lessened cost, the treatment of lower and lower grade ores has been practiced until the market price per ounce of silver obtained has left no profit over cost. Bonanzas, of course, pay better th

higher the market price, but the greater their profits the more money is lost in working unprofitable mines in the hope of finding bonanzas; just as the larger the prize in a lottery, the more money is lost by those who buy tickets in the expectation of drawing it.

The *Post's* cure for the silver industry suffering from a market price below the cost of production is "too funny for anything." It would cheapen production by forming "mining companies with larger capital," as if our Comstock capitalizations were not large enough, or as if the largest investments had induced an exceptional degree of "economy" or "improvement." It would "bring the methods of silver mining into line with other departments of trade and manufacturing," which probably means that it would run a silver mine like a steel works or an anthracite colliery. It would probably invest millions of dollars in "improved" machinery, funaces, railroads and locomotives, using every appliance that would reduce cost of handling and treating ore in the vast quantities handled at a steel works or a coal mine, and having erected such a plant it would probably find the mine or vein capable of producing enough ore in a year to keep the plant running six days and perhaps even before the total output of the mine had amounted to one-half the cost of the plant the ore would "peter out" altogether. What then would be the cost of the silver produced in this "method of mining brought into line with other departments of trade and manufacture"?

The government, in its injurious policy of buying unneeded silver—a policy the ENGINEERING AND MINING JOURNAL has steadfastly opposed from its inception—has not been buying it at an "artificial price." The price of silver, as of gold and wheat and other things, has been regulated by supply and demand. The Sherman Act has increased the demand, and to supply that amount of silver the price had to rise until lower grade ores and expensive mines could be worked. The very rare "big bonanzas" which make large profits at a price for silver that is bare cost or below cost at poorer mines could not alone supply the large demand. No one would invest the large capital necessary to find bonanzas if the price of silver were to be such as to leave simply a modest "manufacturing profit" over cost of producing from bonanzas only. The consequence would be that the bonanzas, always short-lived, would soon be worked out, and the price of silver, if the metal were required in large quantities, would have to rise to the cost of producing from low-grade mines. This price would again offer the needed inducement for seeking for bonanzas, and the business would come back again to where we now are.

It is all a question of supply and demand—and if the world should adopt the single gold standard as the *Evening Post* advocates, the demand for silver would be so small and tne stock on hand so large, that the price would probably go down below the cost of producing even in a rich mine, and the market price of gold would advance rapidly and to a point when bonanzas would be outrageously profitable "by the favor of the government," though a considerable part of the gold would even then be produced at a loss. Notwithstanding the enormous improvements which have been introduced in recent years in the mining and metallurgy of gold as well as silver, and the resulting reduction in cost of production from a given ore, the present market value of gold does not stimulate its production to such a degree as to meet the increased demand gold monometallism would create, and since gold alone would then measure the value of all things its advancing price would simply mean a reduction in the nominal price of labor, manufactures, real estate and everything else throughout the world. We know what it costs to secure a reduction of 5 or 10 per cent. in wages in a single industry or factory or newspaper office, but who can tell what it would cost to reduce all wages one-half or two-thirds throughout the world, until the laboring classes could be educated by the *Evening Post* up to the appreciation of the fact, if fact it were, that they would then be as well off with 50 cents a day as they are now with $1.50. What would become of the industries of the world while this process of education was going on?

Our esteemed contemporary must surely be "daft" on the silver question, or it would see that its solution of the problem—the general adoption of the single gold standard—would result in the impoverishment of one-half the world and probably in an uprising or revolution by the other half, and would prove far more injurious to mankind in general than would the abnormal enrichment of a few fortunate owners of bonanzas.

We would like to see the *Evening Post* lend its great influence to the cause of a gradual, not a sudden, change of the world's standard of money. If gold is to become, as it maintains, the single standard, how much better that this be brought about gradually, without disturbance of industry or a commercial catastrophe, through the universal adoption of bimetallism on a flexible ratio that would permit the peaceful and beneficent final adoption of a single standard, if that were ultimately found in practice to be desirable, or the continuance of universal bimetallism on such ratios adopted from time to time as would secure an equilibrium in production of the metals at prices which would pay only "fair profits through good business operations" to both gold and silver miners. This would be the result of the adoption of bimetallism on a flexible ratio under the control of an international monetary clearing house as proposed in the ENGINEERING AND MINING JOURNAL.

NEW PUBLICATIONS.

FLORIDA. Ocala, Fla.: The Ocala (Fla.) Publishing Company. Monthly price, $1.50 per year.

Special periodicals devoted to the interests of a certain State or section have a place, and a very useful one, in current literature, and when properly conducted may do excellent service. The first and second numbers of "Florida" make an excellent showing. They contain much good matter, and while naturally anxious to speak well of the State, there is no effort to do too much "booming" or to present unreasonable claims. The paper is in very attractive form, the illustrations and letterpress being excellent both in design and execution. Our new contemporary has evidently made up its mind to deserve success, and we hope that it will secure a full measure of it.

MINES AND MINING MEN OF COLORADO: HISTORICAL, DESCRIPTIVE AND PICTORIAL. Denver, Colo.: John G. Canfield. Pages, 120; illustrated. Price, $1, paper; $2.50, full morocco.

In this publication there are presented a number of engravings made from photographs of Colorado mines, mills and towns, with portraits of mining men who have become prominent in the State. The accompanying reading matter is a current description of the illustrations, generally clear and well written, though naturally more laudatory than critical. It makes a handsome volume and gives a great deal of timely information about Colorado, its mineral resources and the extent to which they have been developed. It will be fully appreciated by those who are interested in the State, while outsiders will be attracted by its form and contents, which will give them a definite idea of the importance and wealth of the region.

Mines are somewhat difficult subjects to illustrate, since the outside buildings are not usually extensive, and the photograph of a shaft-house or the mouth of a tunnel shows little except the surrounding scenery. In this book several engravings of the interior workings are given, evidently from photographs taken by flashlight. Some of these are surprisingly good considering the difficulties in the way, and if others are only fair it is as much as might be expected. The list of engravings includes all the noted mining districts of the State, such as Leadville, Aspen, Gunnison, Creede and Cripple Creek, with many of lesser note, besides several of the towns. The pages are large—10¼ × 12½ in.—giving plenty of room for full display of the engravings.

ANNUAL REPORT OF THE CONSOLIDATED STOCK AND PETROLEUM EXCHANGE OF NEW YORK, FOR THE FISCAL YEAR ENDING MAY 31ST, 1893. New York. Published by the Exchange. Pages, 67.

The annual report of this flourishing institution has just been issued. The past year has not been so prosperous as the one before, so far as the volume of business is concerned, owing first to the late presidential election and the natural excitement incident thereto, and latterly to the recent flurries and failures in Wall street. Mining securities, according to the report of Mr. Charles G. Wilson, president of the Exchange, have been neglected and only a limited business was done in them. "Public interest in this class of securities," says Mr. Wilson, "has waned, and there are few new properties being brought forward. . . . The low price of silver and the uncertainty of its future status is in a large measure responsible for the present condition of affairs." The report of Mr. S. White, Jr., chairman of the Committee on Mining Securities, is also published. It contains nothing of interest. Mr. White says that "at the close of the last fiscal year hopes were entertained that a revival of interest in mining securities was near at hand, and that a marked improvement in business would soon take place. Several times during the year it has appeared as if those hopes were to be realized. The California market has repeatedly shown considerable strength and given every indication of renewed activity, and while these periods have been brief and disappointing it is still the opinion of many of the older and best informed traders that there will soon be a decided change in the market, and a much greater interest in mining properties will be developed. Two new companies have been listed during the year and are now regularly traded in. The rich discoveries in the Creede and Cripple Creek mining camps during the past year have directed much public attention to the mining industry, and will, without doubt, greatly aid in reviving speculation in this class of securities." We may say for the benefit of those who are unacquainted with the "older and best informed traders," to whose opinion Mr. White refers, that they are the most sanguine and hopeful class of men on this or any other planet. They cannot resign themselves to a dullness of trade which has, apparently, become incurable. As for the reported showing of "considerable strength by the California market," we venture to ask how, after reading the "Engineering and Mining Journal's" exposures of the methods of the Comstock "ring," Mr. White or any one else can blame the public for failing to respond to the overtures of the San Francisco manipulators. He is a wise man who leaves such tainted stocks alone. The "rich discoveries at Creede and Cripple Creek" were made some time before Mr. White imagines, and so far as we have been able to judge they have not in the slightest influenced trading in mining stocks. A constantly decreasing volume of business is the salient feature of speculation in mining shares, as is shown by the following figures:

For the fiscal year ending May 31st, 1891, there were 3,180,320 shares sold; 1,767,780 shares for 1891-1892, and 1,002,390 shares for 1892-1893. These are the official figures of the Exchange. Our own statistics show that for the calendar year 1889 there were sold 4,114,480 shares, and 11,689,388 shares in 1888.

The oil market has been as quiet as the mining stock market, which is saying a great deal. President Wilson reports that from the present outlook there is little hope of a revival of speculative interest in it.

We would suggest a paragraph that might well be added to this report, namely,

While, theoretically, mining stock exchanges are useful and capable of exerting a beneficial influence on mining, yet all experience has shown that in practice they are chiefly instrumental in floating "wildcats," promoting gambling in worthless "chips," and we believe, without exception, have been an injury and drawback to legitimate mining.

BOOKS RECEIVED.

In sending books for notice, will publishers, for their own sake and for that of book buyers, give the retail price? These notices do not supersede review in another page of the Journal.

Mines and Mining Men of Colorado. Denver, Colo.: John G. Canfield. Pages 120; illustrated. Price, paper $1.; full morocco, $2.50.

North Carolina Agricultural Experiment Station. Report for the Year 1892. H. H. Battle, Director. Raleigh, N. C.: State Printer.

U. S. Department of Agriculture: Experiment Station Record. A. W. Harris, Director. Washington: Government Printing Office.

Geological Survey of Texas. A Contribution to the Invertebrate Paleontology of the Texas Cretaceous. By F. W. Cragin. Austin, Tex.: State Printers. Pages 240; illustrated.

L'Année Minière et Métallurgique 1892. (Bound Volume of "L'Echo des Mines" for 1892.) Paris, France: Société Anonyme des Publications Scientifiques et Industrielles. Pages 1,200.

CORRESPONDENCE.

We invite correspondence upon matters of interest to the industries of mining and metallurgy. Communications should invariably be accompanied with the name and address of the writer. Initials only will be published when so requested.
All letters should be addressed to the MANAGING EDITOR.
We do not hold ourselves responsible for the opinions expressed by correspondents

Uses of Molybdenum.

EDITOR ENGINEERING AND MINING JOURNAL:

Sir: In answer to an inquiry in your number of July 1st, I have to state that in pottery factories, strong, solid and brilliant blue colors are obtained by using molybdenum as molybdate of soda. It is being used also for coloring woolens and silks, though it has sometimes been difficult to make the color fast. A solution of molybdic acid in sulphuric acid is used for dying silk blue. Mobybdate of soda is used in Sweden by doctors as a cure for hydropisia. Molybdenite, sometimes very pure, is found in Sweden, and has always had a ready market in Germany at a price of about 20 francs a kilogramme.

CHICAGO, July 4, 1893. A. F.

The Metallurgy of Nickel.

EDITOR ENGINEERING AND MINING JOURNAL:

Sir: The method of separating copper from nickel, lately discovered by the Orford Company—viz., fusion of the mixed sulphides with salt cake and carbon, has been in use at the Haford Isha Works of H. H. Vivian & Co., Swansea, Wales, for the last 30 or 40 years, and is still in daily use there.

SUDBURY, Ont., June 28, 1893. HENRY W. EDWARDS VAUGHAN, Metallurgist.

EDITOR ENGINEERING AND MINING JOURNAL:

Sir: My attention has been called to a statement, page 119 of "The Mineral Industry for 1892," where, referring to the use of nickel in the manufacture of steel, you say: "It appears to be pretty well determined, however, that in order to exercise its maximum efficiency it is necessary that the nickel added should be absolutely pure, and especially be free from copper—a separation that has thus far been somewhat difficult and expensive. These unwelcome shadows on the Algoma nickel properties have tended to restrict their development and output."

As a matter of fact, all the armor produced in America, and the most successful armor plate produced in Europe—namely, those made at the works of the Acieries de la Marine at Saint Chamond, France, were made from nickel oxide produced by the Orford Copper Company from the copper-nickel mattes of the Sudbury district. Your book is so nearly perfect that any erroneous statement which may have crept in will be accepted as truth unless corrected. For this reason you will excuse my troubling you to print this letter.

NEW YORK, June 30, 1893. ROBERT M. THOMPSON.

"The Mineral Industry" for 1892

EDITOR ENGINEERING AND MINING JOURNAL:

Sir: The quality and value of your book just received justify the delay in its publication. It is safe to say that never hereafter will the government dare to put out any incomplete or inexact mineral statistics or reviews. You have set the standard.

NEW YORK, April 19, 1893. A. R. LEDOUX, Ledoux & Co.

EDITOR ENGINEERING AND MINING JOURNAL:

Sir: Your valuable volume on "The Mineral Industry" is just received. It is an indispensable volume of reference to a professional man and is gotten out in admirable form. I congratulate you upon the successful outcome of this enterprising effort.

JEFFERSON CITY, Mo., April 25, 1893. ARTHUR WINSLOW, State Geologist of Missouri.

EDITOR ENGINEERING AND MINING JOURNAL:

Sir: It is manifestly impossible that I could do more than make a cursory examination of the work in the short time that has elapsed since I received it, but I am highly pleased with its appearance, and the form in which its contents are presented, and have no doubt that the statistics so fully collected will prove to be very valuable to all interested in such matters.

NEW YORK, April 21, 1893. JOHN STANTON, Sec'y and Treas. Atlantic Mining Company.

EDITOR ENGINEERING AND MINING JOURNAL:

Sir: The copy of your great work, "The Mineral Industry," has been received by us and we want to say to you that we are very much pleased with it. You certainly have spared no pains to make this elaborate work a complete success, and we find it exceedingly interesting in all its details. Of course, it will take us some time to read it all through, but we can see enough of it from surface indication, to warrant us in saying that the author of the book is entitled to a great deal of praise for the skill manifested in the compilation of the work.

ST. LOUIS, April 24, 1893. HENRY GREVE, Vice-Prest. John Wahl Commission Company.

EDITOR ENGINEERING AND MINING JOURNAL:

Sir: A careful examination of the volume convinces me more than ever of the value of the work, and I congratulate you upon it. I had immediate use for it in three directions, viz.: The production of argentiferous ores in Mexico, the manufacture of sulphuric acid, and the treatment of zinc-lead sulphide ores, and the information so easily obtained at once has been of much value to me. It is one of the books that I shall keep handy for easy reference and I shall find it constantly of value. It far surpasses anything of the kind that I have ever had occasion to use.

WASHINGTON, April 21, 1893. FREDERIC P. DEWEY, Dewey-Walter Refining Company.

Bi-Metal Money—A Solution of the Silver Question

EDITOR ENGINEERING AND MINING JOURNAL:

Sir: The following plan is suggested as a possible solution of the silver question by which the differences between the gold and the silver men may be compromised:

1. Make the United States legal tender unit $500, in two bars, one of 12·809 oz. of gold, at $20.6718 per ounce, or $250, and the other of 16 times as much, or 193·424 oz. of silver, at $1.29 per ounce, also $250. The two bars may be made into one compound bar, the gold bar lying in a cavity in the silver bar, and easily removable therefrom for verification of its weight and fineness.

2. Let the Government buy at market value all the gold and silver presented, the product of American mines, not exceeding 4,800,000 oz. of silver and 300,000 oz. of gold in any one month, making payment in bi-metal bars or their equivalent in paper certificates redeemable in such bars.

3. Let these bi-metal bars and paper certificates representing the bars be legal tender for all debts public and private within the United States. Issue the paper certificates in any denomination that may be required, not less than $5, and make them redeemable in bi-metal bars when presented in multiples of $500.

4. Make gold and silver coins of the present weight and fineness legal tender to the amount of $500, coining such as may be needed for general circulation, no gold coin being less than $5. The issue of such coins should be in equal values of gold and silver, in exchange for bi-metal bars or certificates; that is, for one $500 bi-metal bar the mint shall issue $250 in gold and $250 in silver coin. These coins should also be exchangeable, at their face value, subject to reduction for loss in weight, for bi-metal bars or certificates when presented in equal values of gold and silver.

5. Gradually retire all the $1 greenback and National bank notes, making $2 the lowest denomination of paper money.

The probable results, I believe, would be: 1. The retirement of $1 notes and the coining of no gold pieces of a lower denomination than $5 will increase the demand for the coinage of the silver dollar and half-dollar.

2. The making legal tender of bi-metal bars and certificates and making gold coin not legal tender in amounts over $500 will decrease the tendency to hoard gold coin.

3. The purchase of silver to an amount not exceeding 4,800,000 oz. monthly will provide a steady market for the silver product of American mines.

4. If the market price of silver should decrease, so that the bullion value of silver should be only 64·5 cents per ounce measured in gold, instead of $1.29; that is, if a silver dollar should be worth only 50 cents in gold, then a bi-metal dollar would be worth $(.50+1.00)\div 2=75$ cents in gold. This would be the cost to the Government of the bi-metal dollar and what it would be worth as bullion. The gold dollar would then be at a premium, measured in bi-metal dollars, its value being $100\div 75=\$1.33\frac{1}{3}$, and it would then be a commodity, as it was from 1861 to 1878.

5. Against this tendency of gold to go to a premium, however, would be the fact that the gold dollar would not be in absolute demand for any purpose except the payment of international balances when the balance of trade is against the United States, a condition that did not exist from 1861 to 1878, for gold was then needed by the Government to pay interest on the national debt, and by the people to pay duties on imports. The tendency of gold to go to a premium would also to some extent be counteracted by results 1 and 2 above.

If in the judgment of Congress the ratio of 16 to 1, above proposed, is not the best possible, the bi-metallic plan here outlined may be carried out on any other ratio, such as 20 to 1 or 24 to 1. If no bi-metallic plan is adopted we must take our choice of two evils, free silver coinage, with all the possible consequences which may follow therefrom, as eloquently described by the gold mono-metallists, or silver demonetization, with its threatened calamitous results, some of which have already taken place, such as the depreciation of the value of the silver and gold in the Government vaults, the stoppage of the silver mines of the West and consequent depopulation of whole districts in Colorado, Idaho and Montana, and the demoralization of business in those States and elsewhere.

NEW YORK, July 2, 1893. WILLIAM KENT.

REDUCTION OF METALLIC OXIDES BY SILICON.

By Wm. H. Greene and Wm. H. Wahl.*

In a previous paper the same authors presented a method devised by them for the production of manganese, based on the reduction of one of the lower oxides of manganese by aluminum. Since then, in searching for commercially available reducing agents, it was found that silicon, either alone or alloyed with other metals, is a strong reducing agent, and by its use they have been enabled to prepare a ferro-manganese with a high manganese content and remarkably low in carbon. On account of the cost attending the preparation of pure silicon, a silicide was used, such as ferro-silicon or silico-spiegel, which may be obtained containing from 15 to 20% silicon and not over 1% carbon. The method of treatment was as follows: The ferro-silicon or spiegel was melted on the hearth of a furnace or in a crucible which was lined with some basic material, as lime or magnesia. To this was then added manganese monoxide or the proto-sesqui-oxide mixed with some flux as lime, magnesia or alumina. Reaction takes place promptly, the silicon being oxidized to silicic acid, which, combined with the flux, forms a liquid slag, while the manganese is set free and combines with the iron set free from the silicon.

The whole charge of manganese and flux may be added to the ferro-silicon at once, or the addition may be made by portions until a sufficient quantity of the oxide is added to utilize the reducing power of all the silicon present. It is necessary to use a larger quantity of manganese oxide than is required by theory for the reason that a certain quantity always combines with silica and passes into the slag.

A charge of ferro-silicon (10% Si. and 1% C) 100 lbs., manganese oxide, 70 lbs., and lime, 50 lbs., yielded 128 lbs. of ferro-manganese containing: Iron, 70%; manganese, 29%; carbon, 0·7%, and silicon a trace. Assuming that the permissible percentage of carbon in a certain manganese steel is 0·5%, then 100 lbs. of the above ferro-manganese will produce by mixture with 40 lbs. of decarburized iron 140 lbs. of manganese steel, containing: Iron, 78·8%; manganese, 20·7%; and carbon, 0·5%. In the preparation of a manganese steel of the same carbon content by melting decarburized iron with ordinary ferro-manganese containing 80% manganese and 5·5% carbon, the resulting metal would contain 92·23% iron and only 7·27% manganese. This at once shows the value of the process. Manganese steel is known to possess certain very valuable qualities, but there are certain practical difficulties in its manufacture on a large scale from ordinary ferro-manganese, for the amount of manganese which can be introduced into the steel is rigorously limited by the carbon which to the amount of 5 to 6% is present and which can not be eliminated on account of its affinity for manganese.

By proceeding substantially as described, but using oxide of nickel, chromium and tungsten, ferro alloys were obtained containing 50% nickel, 20% chromium and 50% tungsten, respectively. With titanium only doubtful results were obtained.

In all these cases the percentage of carbon was relatively low.

Thus far the experiments of Messrs. Greene and Wahl have been restricted to the ferro alloys, but they claim that the reactions involved will hold good for other classes of alloys, and that alloys of copper, for example, with metals which are fusible with difficulty, may be obtained by fusing the appropriate oxides with copper silicide.

Aluminum in Mines.—According to the "Moniteur Industriel," the engineers of the principal coal mines of the Nord, in France, are studying the application of aluminum to the manufacture of cages, cables, etc. The difference in weight between aluminum and iron or steel is considerable, and consequently the use of the former would increase the load capacity; on the other hand, the continuous lowering of the price of the metal renders its use possible.

*Abstract of a paper read before the Chemical Section of the Franklin Institute, Philadelphia, March 21st.

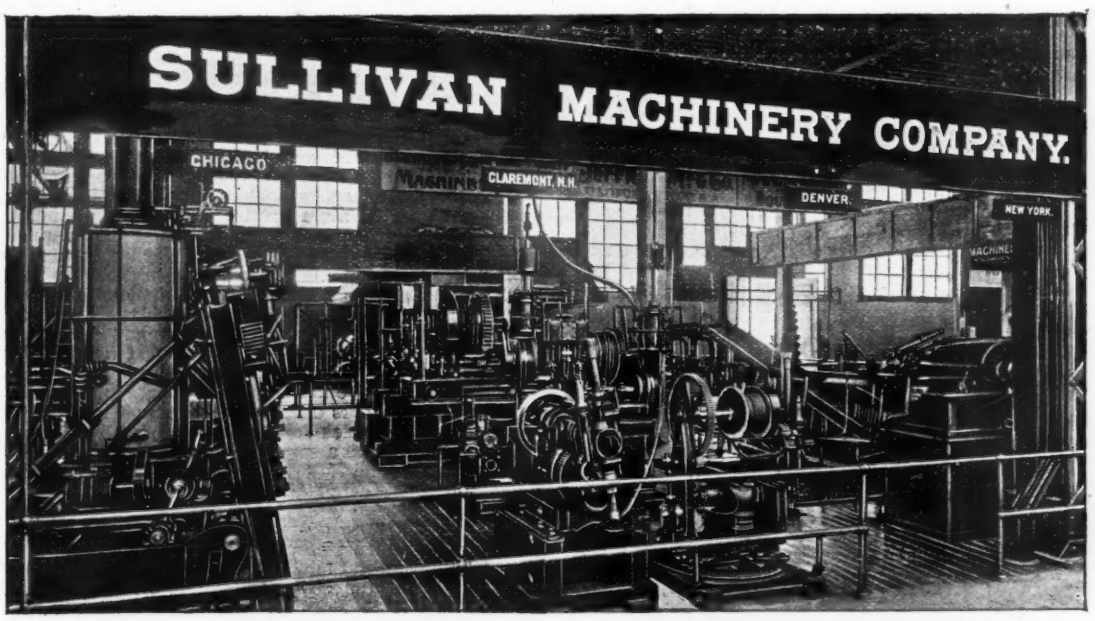
MINING AT THE COLUMBIAN EXPOSITION.

Specially Reported for the Engineering and Mining Journal.

THE SULLIVAN MACHINERY COMPANY, CHICAGO.

The Sullivan Machinery Company, of Chicago, has an excellent exhibit of its widely known prospecting and mining machinery. This exhibit, of which we present an illustration, covers a floor space of nearly 2,000 sq. ft., and is made up of 13 machines, each of which can be seen in actual operation. In the left middle ground of the illustration can be seen their rigid-head channeler, with boiler attached. This is a direct-acting, single-gang machine, having great rapidity and power of blow, these points giving it an advantage over the usual slow-acting double gangs, and making it an efficient and economical machine. The one-sided action so common in most machines of this class, which tends to throw the machine out of balance and give it an oscillating movement, thereby cutting crooked channels, is quite overcome in the construction of this machine, and gives it a very decided superiority. The blow of the machine also can be delicately cushioned and prevented from striking the cylinder head, when cutting across seams or low places, by an ingenious valve device which throttles the exhaust steam, and in this way does away with the springs and buffers commonly used. The machine can be operated on either tracks or guide bars, its movement on either being controlled by a separate engine. All parts of the machine are made strong enough to do the hardest kind of work, and have a very durable appearance. A number of them are at present in successful operation on the great drainage canal at Chicago.

In the middle ground of the picture can be seen several different sizes of diamond-drill boring machines made by this firm. Machines using steam or air with friction and hydraulic feed devices, and electric and hand power machines with improved friction feed gear, are found here. A special feature of the larger sizes of these drills is the hydraulic



feed, which is entirely independent of the driving engines and permits the absolute and delicate control in the drilling in all kinds of rock, whether hard or soft, thus obviating the danger when drilling in variable material of tearing the diamonds out of the crown or twisting the drill-rods off when an extremely hard stratum of rock is met with; it also gives an opportunity for increased speed in drilling when soft strata or cavities are encountered.

A machine of special interest to coal mining men in this exhibit is the Stanley heading machine, which is shown to the right of the illustration, partly concealed behind a pillar. This machine is used for driving entries in coal mines. In principle it is a rotary machine, the steel cutters being set in a bifurcated arm attached to a rotating shaft. An annular groove is made as deep as the length of the forked arm. The core thus made either breaks down of itself or is wedged or blasted off, and is then handled by means of the endless chain conveyor attached to the machine, carrying it back and loading it into cars placed to receive it. By the use of the conveyor in the latest improvement of this machine three or four cars can be loaded at the same time. The great advantage claimed for this machine over present methods of driving entry is that the circular shape of the entry so strengthens the roof that little or no timbering is required. The smooth sides make it desirable for an air course, and therefore make it possible to use a smaller size of entry. Fewer crosscuts are necessary, as the machine ventilates the entry as it progresses, thus enabling it to drive a long distance ahead of air. No tracks are required, the machine slipping forward on a flat steel shoe. This forward movement is given by the motive power of the machine itself. The capacity of the machine is 30 to 40 ft. of entry per day of 10 hours, including the removal and loading of the core on the cars, the whole operation requiring only the services of two men.

Another machine in this exhibit which attracts attention is the Mitchell long-wall machine. Usually in machines for this work the cutter bar is placed parallel to the face of the coal, but with this machine it is placed at right angles. The machine primarily consists of a cutter bar into which small cutters are inserted and rotated by means of du-

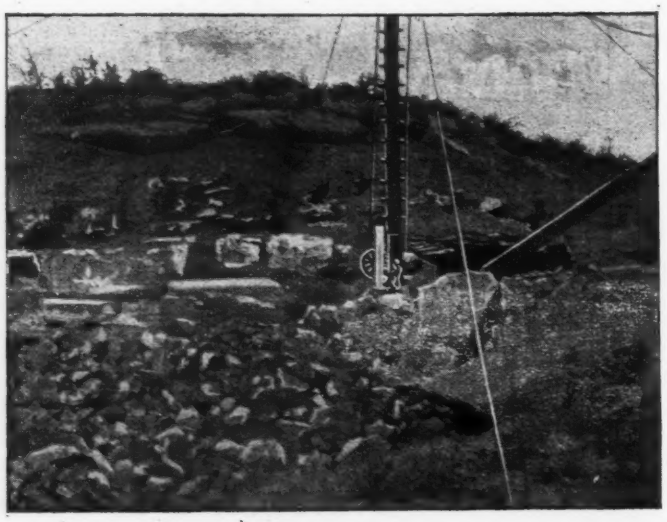
plex engines or an electric motor, and a revolving drum on which a wire cable is wound, and by which the machine receives its forward motion. The points of vantage claimed are high-cutting capacity, it being able to cut 2,000 sq. ft. of floor in 10 hours; it shovels the cuttings by means of cleaner chains, and as it is compact it will work where there is only a space of 3 ft. between face and gob. No tracks are needed, as by a simple steering device the machine is kept close to the face, and to operate it to its fullest capacity requires only the services of one man.

There are several other machines of interest in this exhibit which will well repay a close investigation.

LOWER CALIFORNIA ONYX.

In the middle of the east gallery of the Mining Building is the exhibit of the New Pedrara Onyx Company. The front of the space of 35 ft. in width is fenced in by a balustrade 3 ft. high, with corner posts, round balusters, central panels, and massive railing, all of solid onyx of the most delicate pearl white and greenish tints, with pink and red veins and markings. Within the inclosure are solid slabs of onyx from the quarry, polished on one side; large polished slabs for wainscoting, table tops, mantels and lavatories, with showcases full of smaller specimens illustrating the great variety of the product of the quarries. The quality of this onyx which first appeal to the expert is its remarkable purity and soundness; none of the rocks shows any open cracks, holes or other flaws which are so common in most Mexican onyx. Its ring under the hammer is as clear and sonorous as a bell, and it is so free from flint or any silicious admixture as to render its cutting and polishing much easier than ordinary onyx. To the artistic eye it appeals by the delicacy and purity of its tints, and the absence of the opaque reddish brown veins which disfigure so much of the Arizona onyx; also by its remarkable translucency and remarkable polish.

The deposits from which this onyx is taken were discovered by a Mexican prospector some three or four years since in the interior of the most arid and desolate portion of the peninsula of Lower California.



THE NEW PEDRARA ONYX QUARRY, LOWER CALIFORNIA.

The inaccessibility of the locality rendered it difficult to bring out sufficient of the material to induce capitalists to put up money for its development. Finally at the instance of Mr. G. S. Fellows, at present general manager of the company, Prof. G. P. Merrill, of the National Museum, and author of the standard work upon "Stones for Building and Decoration," made an examination of the deposit in August, 1892, and upon his report the present company was organized in November of the same year. It was not, however, till January of the present year that the actual work of development can be said to have commenced, in the making of a wagon road over 50 miles in length to connect the quarries with the coast, and sinking the necesary wells along its course, for up to this time no wagon road was in existence in this part of the peninsula, and running water is practically unknown. Hence only one of the deposits has as yet been quarried, and but a limited amount of material could be shipped in time for the opening of the Exposition.

The property of the company consists of 2,000 hectares (5,000 acres) of land a little below latitude 30° and about 40 miles in an air line from the Pacific coast. On this are two series of deposits of onyx, three or four miles apart. The larger or southwestern series shows outcrops of onyx more or less continuously over an area of about 20 acres. They occur at an elevation of about 2,300 ft. in a shallow valley or arroyo, between flat-topped ridges of horizontally stratified beds of Cretaceous age, which a few miles farther east are capped by basaltic lavas. Within the arroyo and immediately under and between the layers of onyx are soft limestones and conglomerates with lime cement, probably belonging to a series of Tertiary or recent beds deposited in an irregular lake that once filled a great interior valley which occupies the medial portion of the peninsula parallel with its shores. The underlying or basement rocks beneath these horizontal Cretaceous and Tertiary beds in the vicinity of the deposits, as shown by occasional outcrops where denudation has removed the covering of softer rocks, is granite and gneiss.

The springs that formed these onyx deposits must have extended nearly a mile up and down the valley. Their action was evidently intermittent. The layers of onyx formed by the evaporation of their waters extended in some places entirely across the valley, and when the deposition of one layer had ceased a long period of erosion followed, during which a thickness of several feet of gravel, cemented by lime, was deposited over it, after which the spring action commenced anew. Thus at least three, and possibly more, distinct layers of onyx were formed, from one to three or more feet in thickness. Later erosion which carved out the present valley has removed a great deal of the onyx, and the present stream bed in its winding course has cut down 20 ft. or more below the upper remaining layers of onyx, leaving outcrops on both sides of its course. The accompanying cut is the reproduction of a photograph taken in May last of the face of the present opening, showing a top layer of onyx nearly 2 ft. in thickness more or less worn and broken into irregular blocks by exposure to the atmosphere. The bottom layer, 3½ ft. thick, from which the last quarried blocks have been taken, shows still more distinctly owing to the whiteness of the freshly broken surface, while the intermediate layer, also about 2 ft. thick, is obscured by gravel and debris which have fallen down over its surface. The top of the bluff is 22 ft. above the foot of the derrick. In the foreground is a pile of broken onyx, temporarily put aside.

The northeastern deposits are in a deep ravine about 3 or 4 miles from the above described, in a region of very different topographical forms. Instead of soft horizontal clays and sandstones, with smooth, gentle slopes, the rocks are steeply upturned, hard slates and quartzites which rise steeply in jagged peaks on all sides. The occurrence of the onyx is similar, forming layers in a recent gravel or cement deposit which at one time filled the bottom of the ravine, and has since been cut into 20 or 30 ft. by the present stream bed, on one side of which it forms a vertical cliff with great shallow caves on its face. A relic of the original spring action is found in a dome-shaped mound of calcareous sinter, on the top of which is a little effervescent spring known to the Mexicans at the "Volcan."

The peninsula of Lower California in this latitude is a most singular region. It has the general appearance of having emerged from the ocean in comparatively recent times, the valleys being broad and shallow for the most part, with little evidence of the action of running water, the ridges being mostly flat-topped, with a common level parallel with the bedding of the rocks of which they are composed, while most of the few high mountains are of volcanic origin. The watershed is on the east side near the Gulf of California, and less than a third of the distance across. The slope toward the gulf is hence comparatively steep, being through steeply upturned older rocks, a buried mountain chain, from which for considerable distances the recent covering of the soft Cretaceous rocks has been entirely removed, leaving an intricate network of deep tortuous ravines, extremely difficult to traverse. On the west of the main divide, on the other hand, the valleys are broad and shallow, and slope very gently and regularly toward the sea, so that it is comparatively easy to find a good route for a wagon road. There is no running water and springs are few and far between, so that wells have to be sunk in order to obtain a regular supply of water. The vegetation is relatively abundant for an arid region, consisting mainly of a great variety of cactus and other leafless trees, with fine examples of the candelaria or giant cactus, mescal or yucca, sirio and occasional mesquite. There is evidence of considerable mineral wealth in the region, outcroppings of copper and gold ores being abundant in the older rocks on the east side, and in a diorite range nearer the Pacific coast, which forms the western boundary of the great interior valley, in which a copper mine has already been worked.

The onyx from the New Pedrara quarries is hauled by wagon to the Pacific coast, and there loaded on steamers or sailing vessels, by which it can be transported to any port, the nearest railroad at present being at San Diego, a little over 200 miles from the landing place. When shipping arrangements now in progress are finally completed they will be able to ship several hundred tons of onyx per month.

The officers of the company are: S. F. Emmons, of Washington, president; Chas. S. Bradley, secretary and treasurer. These, with W. H. Forbes, Thos. Somerville and Samuel Maddox, constitute the board of directors. A. D. Foote is superintendent at the quarries.

THE MACKAY ELECTRIC MINING DRILL.

The illustration presented shows a machine drill operated by electricity, and it is claimed by the company which builds them that a number of these machines are in successful operation at the present time in the East. This machine is called the Mackay electric mining drill, and is manufactured by the Mackay Electric Reciprocating Tool Company, of Boston, Mass. The exhibit of this company consists of their regular mining drill, a small drill for plug and block holes, and a portion of the mining drill showing the internal arrangement of the coils and working parts of the machine. The principal of the machine is the well known coil and plunger, the plunger or armature of which carries a sliding commutator, which is ingeniously designed to automatically change the current from the upper to the lower coils of the solenoids alternatively, but without breaking the circuit at any time, thus giving a continuous reciprocating movement to the armature or plunger, which at the same time carries the drill. By this arrangement it is possible to use the current from an incandescent light or other continuous current circuit without interfering with any lights or motors in that circuit. This arrangement also cheapens the cost of the necessary plant, as the same dynamo that operates the drill can also operate the lights and any motors used, such as pumps, hoisting machinery, etc. These machines are strong and durably built, the selenoids being wound on a brass tube with metal flanges at the ends to prevent the wire from slipping off, and to give them the proper form. The size of wire used is of a gauge large enough to carry the current generafed by the dynamo used, without excessive heating. This size is purely a matter of mathematical computation from well known formulas. The coils are wound to suit the dynamo that furnishes the power to drive the drills and other machinery. The only wearing parts are the commutator plates and the boxes through which the plunger reciprocates. These are made very durable, but when worn out can be replaced by duplicate pieces in a few minutes. The coils and working parts are inclosed in a malleable iron jacket, and thus protected from any external injury.

These machines are mounted for work on tripods or columns similar to those used by the ordinary air and steam drills. The chuck for holding the drill is claimed to be an improvement on anything at present in use, as it has a bearing on the drill in two places by means of a cam which is operated by a small screw; it holds the drill much firmer, without the possibility of getting out of repair, as the parts are made very strong, and by this arrangement there is very little strain on the screw. No oil is required to lubricate the working parts of the machine, such parts being arranged with a lubricating composition which is sufficient to cover all requirements. The drill armature will automatically cushion itself when the plunger passes beyond its proper stroke, it being possible to run the machine at its highest speed in air without endangering any part of it. The machine shown in the illustration, which is intended for regular mining work, will strike a blow of 250 lbs. at each stroke, and will drill a hole 1½ in. deep in the hardest granite in a minute, using a drill 1½ in. in diameter. The length of stroke can be varied as desired from 4 to 8 in. This drill is designed to drill holes 1¼ to 2 in. in diameter and from 5 to 10 ft. deep. When in operation it absorbs about 2 H. P., and makes about 400 strokes per minute. The length of feed is 30 in.

THE STERLING-MOREAU PERCUSSION HAND DRILL.

This hand rock-drill has been designed especially for mining work. The inventors have several of them on exhibition. The illustration we present with this will give the reader a very fair idea of the drill as mounted on a tripod. In their exhibit they have arranged it so as to give an idea of the various ways it can be set up and applied to drill holes used in all ordinary mining work. With this drill it is claimed that an ordinary workman is able to accomplish the same amount of work in a given time that three miners can do with hammer and drill in the usual way. The machine is a percussion drill, and consists mainly of a hollow shell, at the forward end of which is secured a rotary spindle adapted to hold the drill in combination with a pair of

THE MACKAY ELICTRIC MINING DRILL.

hammers mounted on a frame pivoted at the other extreme end of the shell. A cam shaft, provided with two shafts, is also mounted in bearings upon the shell, and is arranged to press the hammers backward against their respective reciprocating springs, and also to cause them to present themselves alternately in front of the head of the drill tool for the delivery of the blow. In the interval of time between the alternate blows of the hammers the drill is made to rotate a fraction of the circle, then comes to rest to receive the blow. The combined action of the hammers driven violently forward against the head of the drill and the rotation of the same result in a circular chipping or drilling of the rock. The feeding forward of the machine while in operation is entirely automatic, adapting itself accurately, by a very simple and ingenious arrangement, to all kinds of rock, regardless of variations in hardness or texture; so that all the operator has to do is to turn the shaft cranks. In the construction of this rock drill the inventors have shown a clear knowledge of what is required in a machine of this class, viz., lightness and strength, few parts, and the complete protection of working parts from dust, grit and rough handling, by having all inclosed in a protecting shell. All parts are made to template and are interchangeable, thus making repairs when necessary quickly and cheaply accomplished. The main working parts are made of "chrome" steel, which material was chosen after a series of trials made to secure to them a maximum of endurance. This machine can be worked continuously by any one of ordinary strength with very little fatigue. One size of machine only is built; its weight is 75 lbs., not including the weight of the tripod or column on which it is mounted. Its capacity when drilling a hole 1¼ in. in diameter is ⅜ to ½ in. a minute in granite, 1 in. in limestone, and 2 to 2½ in. in sandstone. This capacity is made when the cranks are turned 80 revolutions per minute. This has been found to be the average speed which an ordinary workman is able to sustain easily for considerable lengths of time. The inventors also make a self-cleaning drill tool especially adapted to this machine; it is similar to a twist drill except that the spirals are longer. Its object is to keep the hole being drilled free from the drillings, and thus obviate the necessity of stopping and removing the drill to clean out. The length of feed is 12 in., and the drill is capable of putting holes down to a depth of 4 ft.

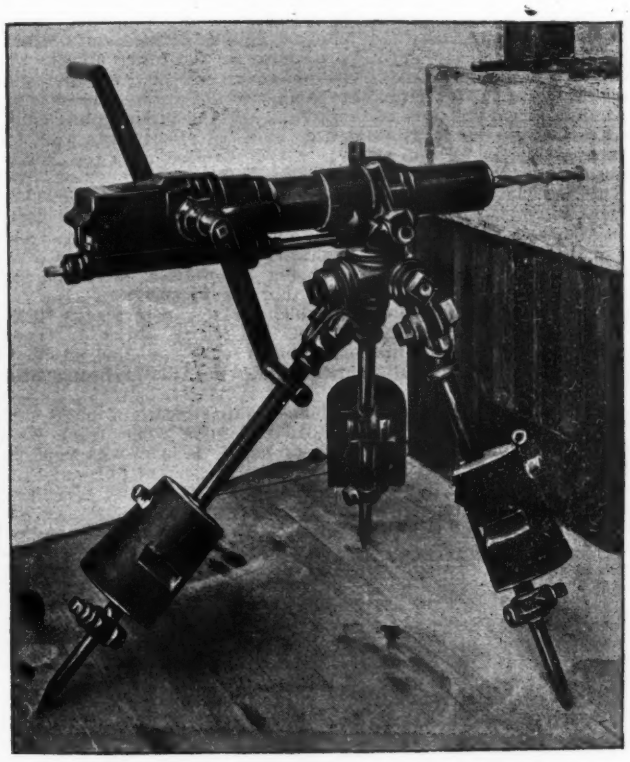
ABSTRACTS OF OFFICIAL REPORTS.

DE LAMAR MINING COMPANY, LIMITED, IDAHO.

The report of this company's operations during the fiscal year ending March 31st, 1893, which was presented at the annual meeting held in London, June 26th, shows a revenue account as follows: Receipts: sales of bullion, £164,316; sales of ore, £36,667; sundry, £2,669; total, £203,662. Expenditures: Mining and milling, £93,776; charges in London, £4,525; total, £98,301. This leaves a gross profit of £105,360, which added to balance brought forward made £133,758. Of this sum £85,000 were paid in dividends, £15,000 charged to capital account, being expended in purchase of adjoining properties, and £3,000 to renewals of machinery, leaving £30,758 to be carried forward. Of this sum, however, £30,000 were paid in dividends in April.

Captain Plummer, the manager, states in his report that 29,801 wet tons (equal to 26,853 dry tons) were raised and milled; the 25-stamp mill worked 347 days, the duty per stamp being 3.09 tons. The ore milled had an assay value of $36.59, of which gold was $20.12 and silver $16.47.

The percentage saved according to assay was 82·67; according to bullion returns, 82·88%. There were produced 19,024 oz. of fine gold and 487,137 oz. of fine silver, of a total value of $805,149. The average price realized for silver was 84·45 cents per oz., against 94·05 cents in 1892. This decrease represents a falling off of about $65,000 in income, or nearly 3% on the company's capital.



THE STERLING-MOREAU HAND ROCK DRILL.

The percentages saved compare favorably with the preceding year, especially in silver, but in all grades of the ore a certain amount of gold escapes. It is expected to remedy this in the future by concentration. There were 365·5 tons of shipping ore sold, producing £176,520, or $483 per ton.

The detailed mining expenses per dry ton were as follows: Mining, $7.83; milling, including labor and supplies, $7.43; freight and expenses on bullion, 79 cents; freight and charges on ore, 52 cents; insurance, 18 cents; extraneous expenses, 34 cents; a total of $17.09. It is to be remarked that the detailed abstract of the revenue account which accompanies the report shows wide and striking variations in the cost of mining and milling. Thus, in April, 1892, the total cost per dry ton was $18.18, or $1.09 above the average; of this sum 77 cents was in mining and 29 cents in milling charges. The extremes of total cost per ton were $15.84 in October and $18.18 in April. The extremes in mining were $9.01 in May and $6.80 in January; in milling, $8.38 in May and $6.70 in October.

The report is unfortunately not given in sufficient detail to locate the causes of these differences, but they were probably due to a greater or less amount of exploration work and improvements. A very full detailed statement is given of the ton cost of ore treated during the year. The more interesting items are: Superintendence, 49·5 cents; crushermen, 14·4 cents; batterymen, 16·3 cents; tankmen, 15·7 cents; panmen, 21·8 cents; pan helpers, 18·9 cents; mechanics, 28·4 cents; all others, 89·3 cents; a total of $2.45 for labor. The supply account per ton milled was as follows: Chemicals, 36·3 cents; castings, 43·1 cents; quicksilver, $1.57; salt, 23·7 cents; fuel, $1.43; all others, 93 cents; total supplies, $4.96 per ton.

The detailed costs of mining and shipping high-grade ore were as fol-

lows: Labor and supplies, $135.74 per ton; proportion of salaries, $4.23; collecting concentrates, $4.72; freight and charges from mine to Denver, $36.76; a total of $181.45 per ton.

The prospecting and development work done was as follows: Shafts, 223·7 ft.; levels, 4,726 ft.; drifts and crosscuts, 974 ft.; raises and winzes, 840 ft. Of this work detail costs were not given.

Captain Plummer reports on the condition of the mines that the Wahl tunnel was extended 319 ft., making a total length of 2,141 ft. The extension cut three new veins similar to the others.

Incline shaft No. 2 is now down to 9th level. On the Wilson vein all operations were above 4th level. As it approaches the surface it decreases slightly in value, but the ore is favorable for milling. It is 3 ft. wide, runs $25 per ton, and is under development for 175 ft. The condition at the Hamilton is similar to that on the Wilson. The ore runs $29 per ton and the vein is developed for 240 ft.

The 77-ft. vein has maintained its massive character and uniformity. A new shoot of ore was encountered at the eastern section on the 4th level, which was supposed to be exhausted. The shoot continued for 125 ft. and ran $31 per ton. No. 5 vein has been worked up to its line of apex in many places, and yielded largely during the year. On the 9th level the present face looks well, assaying $45 per ton. On the No. 6 vein the workings commenced on the 8th level and levels east and west are both in ore; 200 ft. are now under development, the width of vein being 2 ft. 8 in., and the ore assaying $44 per ton. On No. 9 vein, at the eastern end the ore is low grade; in the west the vein is 2½ ft. wide and assays $40 per ton.

The report is accompanied by maps showing cross section of stopes and veins.

SIERRA BUTIES GOLD MINING COMPANY, LIMITED, CALIFORNIA.

This company works three mines, the Sierra Buttes, Plumas-Eureka and Uncle Sam, for which separate accounts are kept, but the profits accruing from the Uncle Sam mine are equally divided and the moieties credited to the profit and loss accounts of the other mines. The report for the half year ending December 31st, 1892, gives the following figures: Sierra Buttes mine: The balance to the credit of profit and loss, including $20,315 moiety of profit from the Uncle Sam mine, amounted to $25,878, and out of this sum a dividend of $14,914 was paid, leaving a net mining balance of $10,964. The ore raised from the North Cliff vein during the half year amounted to 3,180 tons, of which 380 came from No. 2 level, 1,570 from No. 3 level and 1,230 from No. 3½ level. There were also worked 360 tons from the old dump. The Reis mill ran 175 days, producing $12,647 in gold. The average yield of ore was $3.57 per ton; average cost of working $1.95, and profit $1.62.

The report states that ore is being taken from some pillars left standing in the old workings, and that the prospects of supplying the mill for some months are favorable. A later report says that some fair ore has been cut in No. 4 level.

The balance sheet of this mine shows a reserve fund of £11,388 invested in English railroad securities, and a net balance brought forward of £1,350.

Plumas-Eureka mine: The balance to the credit of profit and loss for the half year, including $20,315 moiety of profit from the Uncle Sam mine, amounted to $38,939, of which $25,682 was paid in dividends. The ore raised amounted to 19,930 tons as follows: From the Mammoth tunnel, 2,750 tons; Hosking vein, 7,790 tons; Wright's No. 2 South vein, 1,755 tons; Wright's No. 3 South vein, 6,530 tons, and the Rough and Ready mine 1,105 tons. The Mohawk mill worked 184 days, with an average of 24 stamps running, and crushed 19,925 tons of ore, yielding gold of the value of $82,203. The average yield in free gold was $4.12 per ton, as compared with $4.72 in the preceding half year. The sulphurets saved amounted to $0.13 per ton, making the total yield $4.25. The expenses in detail were as follows: Mining and prospecting, $3.055 per ton; milling, $0.39; treatment of sulphurets, $0.08; total, $3.525, as compared with $3.755 for preceding half year.

The quantity of sulphurets concentrated was 200 tons, the quantity treated 410 tons; gold extracted from sulphurets, $5,955; an average of $12.91 per ton; the cost was $2,266; profit, $3,029.

The superintendent reports on the work of the half year as follows: Exploratory work, 1,089 ft., of which 440 was on Jenkins tunnel. This tunnel, which is on the line of the Eureka vein 150 ft. above the Prospect tunnel, was started on account of a branch of quartz found near the Peak during the summer. Where first discovered it was but 4 in. wide, but it has widened out to 15 in. and runs $4 per ton. It is supposed to be the top of the Eureka vein.

There were no important developments in the Hosking shoot or any of the Wright S. veins, although drifts were run in every direction, and it is intimated that the future of the mine depends largely upon possible discoveries in the Jenkins tunnel.

There is as yet plenty of low grade ore in the Hosking and Wright veins, but it is not certain how long these will continue to pay expenses. The balance sheet of this mine shows a reserved fund of £36,090 invested in English railway securities, and a cash balance carried forward of £3,824.

Uncle Sam mine: The profit for the half year amounted to $50,370, of which $9,740 was carried to the reserve fund, $20,315 transferred to the Sierra Buttes and a like amount to the Plumas-Eureka. The ore mined amounted to 9,945 tons, of which 2,434 tons was from the North vein and 7,511 from the South vein. The ore milled was 9,915 tons, from which gold to the value of $92,467 was obtained, an average of $9,325 per ton. The yield from sulphurets saved was equal to $1,135 per ton, making total yield $10.46 per ton.

The average cost of mining and prospecting was $3.44 per ton, of milling $0.64, and of treating sulphurets $0.40, making total working cost $4.48 per ton, as comupared with $4 in the preceding half year. It is stated that the increased cost was due to a scarcity of water, entailing the use of steam. In all 138 tons of sulphurets were concentrated and 164 tons treated by chlorination, which yielded $13,315, an average of $81.19 per ton. The expenses were $4,274, or $28.06 per ton, and the profits $9,042. The superintendent reports work done during the half year as follows: Exploring work, 1,015 ft.

South Lode.—No. 3 level shows a vein 3 ft. wide, but too poor to work. On No. 2½ level the vein has widened to 7 ft. and runs from $6 to $9 per ton. No. 3 level west was not advanced, but a lateral drift was run 170 ft., along which the vein is hard, from 3 to 8 ft. in width and running from $4 to $7 per ton. On No. 2 level, nothing of note was discovered, but the stopes above continue to yield ore of a fair quality.

North Lode.—On level No. 1 some work was done which facilitated handling of ore, but the part opened developed no pay. On No. 2 level, in the eastern portion the vein is small, but in the western part of the stopes the vein is from 4 to 6 ft. wide and of the usual grade. No. 3 level was not extended, but stoping was carried on as usual. A later report states that promising developments are being made in the lateral drift, No. 3 level south, and that on No. 2½ level the vein is large, but poor. In view of the fact that a general falling off in the value of the ore seems likely to occur, the superintendent advises the erection of a Bryant or Huntington mill to crush from 10 to 15 tons per day.

THE OLDEST COPPER MINE.*

If not absolutely the oldest, the Stora Kopparberget in Sweden is the oldest copper mine of which we have any official figures. It has been worked continuously for nearly 800 years, and the accompanying table shows the production for each year since 1633. This is probably the only mine in the world for which figures of production for 260 years can be thus given.

As early as 1228 the Stora Kopparberget yielded large profits to its owners. In 1650 no less than 3,450 tons of copper were produced, an amount sufficient to supply all the then civilized world. Gustavus Adolphus used to call it his "treasure," which, considering the big income the Government derived from the mine, was a most appropriate name. For many years the mine was worked by the Government, and then by the Stora Kopparbergs Bergslags Company, which now owns it. In the 790 years during which it has been worked it has produced no less than 1,200,000 tons, which, at an average price of $140 per ton, amounts to $168,000,000.

Besides this mine, the Stora Kopparbergs Bergslags Company owns other large mining properties. In 1873 it built new works at Dommarfoet, 20 kilometers from Falun, where a water power of 4,000 H. P. drives all the machinery by means of 15 turbines. These works, the

ANNUAL COPPER PRODUCTION OF THE STORA KOPPARBERGET.

Year.	Metric Tons.	Year.	Metric Tons.	Year.	Metric Tons.	Year.	Metric Tons.	Year.	Metric Tons.	Year.	Metric Tons.	Year.	Metric Tons.	Year.	Metric Tons.	Year.	Metric Tons.	Year.	Metric Tons.
1633	1,336	1659	2,224	1685	2,049	1711	1,330	1737	812	1763	798	1789	1,046	1815	874	1841	557	1867	584
1634	1,868	1660	2,393	1686	2,140	1712	1,379	1738	822	1764	619	1790	1,142	1816	631	1842	588	1868	712
1635	1,929	1661	2,222	1687	1,791	1713	1,277	1739	855	1765	782	1791	1,191	1817	595	1843	570	1869	728
1636	1,592	1662	2,595	1688	1,672	1714	1,276	1740	894	1766	732	1792	1,023	1818	692	1844	571	1870	755
1637	1,700	1663	2,532	1689	1,926	1715	1,255	1741	985	1767	846	1793	840	1819	801	1845	565	1871	701
1638	1,653	1664	2,543	1690	1,943	1716	1,161	1742	1,053	1768	555	1794	791	1820	830	1846	727	1872	711
1639	1,874	1665	2,311	1691	1,605	1717	1,093	1743	971	1769	822	1795	768	1821	766	1847	713	1873	588
1640	1,927	1666	1,992	1692	1,683	1718	1,049	1744	899	1770	754	1796	632	1822	635	1848	815	1874	419
1641	1,409	1667	1,841	1693	1,658	1719	1,079	1745	822	1771	765	1797	597	1823	642	1849	836	1875	491
1642	2,252	1668	1,845	1694	1,505	1720	1,105	1746	834	1772	791	1798	637	1824	675	1850	843	1876	531
1643	2,054	1669	2,181	1695	1,486	1721	1,079	1747	820	1773	893	1799	657	1825	546	1851	867	1877	401
1644	2,139	1670	1,849	1696	1,566	1722	890	1748	911	1774	728	1800	587	1826	541	1852	874	1878	746
1645	2,060	1671	1,812	1697	1,453	1723	1,002	1749	891	1775	856	1801	701	1827	597	1853	782	1879	598
1646	2,055	1672	1,917	1698	1,308	1724	968	1750	782	1776	659	1802	859	1828	545	1854	836	1880	669
1647	2,062	1673	2,225	1699	1,156	1725	908	1751	741	1777	868	1803	706	1829	551	1855	786	1881	626
1648	2,087	1674	2,001	1700	1,275	1726	938	1752	844	1778	860	1804	709	1830	504	1856	762	1882	534
1649	2,345	1675	2,518	1701	1,394	1727	973	1753	930	1779	865	1805	698	1831	496	1857	681	1883	532
1650	3,455	1676	2,727	1702	1,475	1728	1,010	1754	932	1780	999	1806	638	1832	503	1858	612	1884	459
1651	2,938	1677	1,991	1703	1,405	1729	981	1755	934	1781	1,031	1807	740	1833	379	1859	558	1885	443
1652	2,623	1678	2,269	1704	1,458	1730	832	1756	877	1782	1,064	1808	792	1834	451	1860	535	1886	434
1653	2,644	1679	2,541	1705	1,485	1731	900	1757	890	1783	1,071	1809	798	1835	538	1861	472	1887	418
1654	2,099	1680	2,226	1706	1,484	1732	889	1758	1,026	1784	1,048	1810	685	1836	544	1862	536	1888	411
1655	2,082	1681	1,915	1707	1,506	1733	840	1759	942	1785	1,140	1811	580	1837	597	1863	627	1889	356
1656	2,106	1682	2,586	1708	1,507	1734	874	1760	731	1786	962	1812	584	1838	554	1864	575	1890	331
1657	2,151	1683	2,460	1709	1,459	1735	880	1761	637	1787	1,217	1813	660	1839	537	1865	659	1891	271
1658	2,073	1684	1,890	1710	1,391	1736	792	1762	709	1788	1,146	1814	668	1840	538	1866	626	1892	....

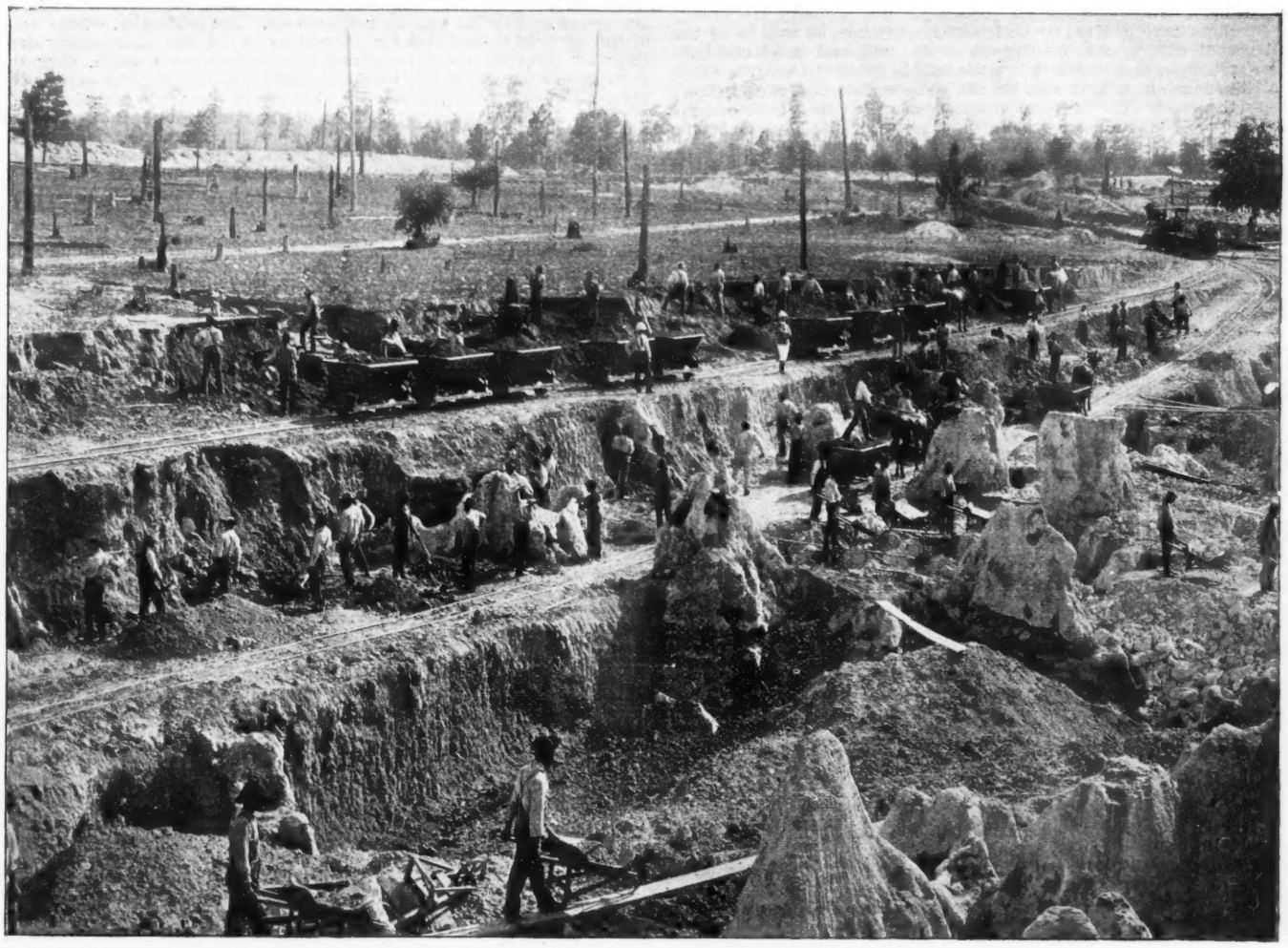
* From "The Mineral Industry" for 1892. Copyrighted by the Scientific Publishing Company.

largest of their kind in Northern Europe, are connected by rail with Stockholm, Gottenburg, Gefle and other ports. The production for 1891 was: Iron ore, 80,000 tons; copper ore, 15,000 tons; iron pyrites, 500 tons; copper vitriol, 600 tons; iron vitriol, 250 tons; red ocher, 1,000 tons; sulphuric acid, 2,000 tons; gold, 70 kilos; silver, 330 kilos; copper ingots, 500 tons; pig iron, 52,000 tons; Bessemer ingots, 25,000 tons; Siemens-Martin ingots, 26,000 tons; Lancashire balls, 7,000 tons; rolled iron and steel, 45,000 tons; forged steel, etc., 600 tons; forged bar-iron, 1,200 tons; horseshoe nails, 600 tons.

A FLORIDA PHOSPHATE MINE.

The accompanying illustration, for which we are indebted to the courtesy of "Florida," published at Ocala, shows the method of open working by benches adopted in the extensive phosphate mines of the Compagnie des Phosphates de France at Anthony, Fla. This company has had some 20 years' experience abroad, owning mines in France and Algeria, and in Florida it has adopted methods approved by its own experience. Its mines are fully provided with washers, driers and other machinery. Naturally the company's workings have been much discussed, and have been a point of interest for all who are engaged in the phosphate business.

The photograph from which the engraving was made is an excellent one and leaves little to be described.



PHOSPHATE MINE OF LA COMPAGNIE DES PHOSPHATES DE FRANCE AT ANTHONY, FLORIDA.

Iron in Korea.—Consul-General Heard at Seoul reports that, with very slight exceptions, all the iron used in Korea for agricultural, household and other purposes is of native production; but, although the quantity must be large, no statistics of it exist. It is not taxed, and the Government keeps no records. Iron ore is found in many parts of the peninsula in great abundance. It is generally of good quality, but no report upon it has ever been made public by foreign experts. It may be that the fact that coal has not been found in proximity to the iron deposits has discouraged investigation. Neither iron nor coal has been systematically sought for. Mines, such as they are—shallow holes in the ground—are scattered throughout the country; but they cannot go deep. The natives do not understand ventilation or lighting, and they cannot deal with the water which accumulates in the mines. They do not use explosives for blasting out the ore, and, as they only do what they find easy, the mines are soon abandoned. A good deal of the ore is magnetic, and, if it were not rich, would not pay the natives to work. Coal not being found with the iron, the ore is smelted in the old-fashioned Catalan furnace with charcoal—a most expensive process.

THE PENOBSCOT MINE AND MILL, MONTANA.

Written for the Engineering and Mining Journal by H. M. Boadle.

The Penobscot property lies three miles southwest of Marysville, Mont., and is located on the ridge which forms part of the main chain of the Rocky Mountains. There are two claims on the vein—the Penobscot and the Snowdrift—the property taking its name from the former. The strike of the vein is about 60° east of north and west of south. The vein is believed to be a true fissure, cutting through the magnesian slate, the bedded rock of that region, and a dike of granite. The hanging wall at the east end of the vein is granite. The dip is to the north, and so far as explored is about 80° from the horizontal.

At the line separating the two claims is the discovery shaft, which has been sunk over 100 ft. to the 100 level. The ore-shoot here was not of great length, being about 250 ft. on the surface and in the 100 level about 180 ft. The ore in this shoot is not as rich as that in the eastern shoot on which the old working shaft was started.

At a point 400 ft. east of the discovery shaft, an air shaft was sunk to the 100 level. This is the present working shaft. It has been sunk to the 200 level, and is being continued to the 300 level, where it is expected to strike the rich ore-shoot found in the old working shaft, and will, as quickly as possible, be continued down to the 500 level, or as far as the ore-shoot continues.

The old working shaft, 270 ft. east of the present working shaft, has caved to the 100 level. Below that level it is in good order. It is 486 ft. deep, with levels every 50 ft. The 100 level is 1,200 ft. long, the 200 level about 520 ft. long, the 300 level 450 ft. long. Below this the levels are short and now they are all under water.

About 200 ft. east of the old working shaft the vein divides, or, more probably, there is a large slate horse in it. In the 100 level the point of this supposed horse is 150 ft. east of the old working shaft. At the 300 level the point of this horse is a few feet west of the same shaft, showing the horse is dipping to the west. The east ore-shoot on which the old working shaft was sunk follows the same course, being largest and richest at the point of the horse which marks its eastern boundary. North of this horse the vein is 2 ft. wide; south of the horse it is 4 ft. A crosscut on the 200 level shows that the horse is 18 ft. wide, 20 ft. from the western point.

Some 50 ft. west of the discovery shaft a winze was sunk in ore 50 ft. from the 100 level. On a branch vein, which is united with the main vein east of the discovery shaft, and which it is believed is united with it again further west, 3 ft. of ore was found and taken out by Mr. John Longmaid, the father of the present proprietors, which carried over $1 in gold to the pound of ore. While this was the richest body of ore of any great size found in the mine, many samples were

discovered that were much richer. One large sample of carbonate, which ran nearly 80% lead, carried $5 in gold to a pound of ore.

A vein was recently discovered about 2,400 ft. west of the present working shaft, and from crosscuts on the surface there is but little doubt that it is the Penobscot vein. A tunnel is now being driven on this vein which is expected to tap the 300 level of the Penobscot. It is now in 300 ft. Ore has been found all the way in this tunnel, but no rich ore-shoot has been encountered. A body of good ore has recently been exposed between the 100 and 200 levels, just east of the present working shaft.

The Penobscot was formerly owned and worked by Mr. Nathan Vestal, who sold it to a Michigan company, in which Captain Frue, the inventor of the Frue vanner, now deceased, was a large stockholder.

Under the management of Captain Frue's company the Penobscot was not a dividend-payer, and it was shut down and finally sold by an order of court, Mr. John Longmaid becoming the purchaser. In a short time over $60,000 was made out of the property, leaving a profit of over $30,000. Mr. Longmaid last year sold the property to his sons.

In putting up the buildings and operating the property the Longmaid Brothers have profited by their own experience, as well as by the experience of others. At the Penobscot the mill and hoist are both in the shafthouse, and water to run the mill is pumped from the mine, and all the machinery is driven by the same engine and the engineer operates the hoist. The ore and waste are hoisted in a self-dumping skip. The 10-stamp mill was made to order after the designs of the Longmaids, by Fraser & Chalmers. The shoes and dies were made by the Chrome Steel Works, of Brooklyn, N. Y., and the good work of the mill is largely due to the excellent machinery. The stamps weigh 1,050 lbs. each, and the mortars are heavier and narrower than usual. The screens are brought much nearer the stamps than in the mills heretofore built, being within 4 in. of the dies. The scroll, or order in which the stamps drop, is 1, 3, 5, 2, 4, in each battery. The drop of the stamps in the battery which crushes the fine ore is 8 in., and on coarse quartz in the other battery the drop is 10 in., but the height of the drop may be changed often. The number of drops per minute is about 90. The screens are 9×48 in. The one for crushing fine ore is a 40-mesh, and the other a 30-mesh.

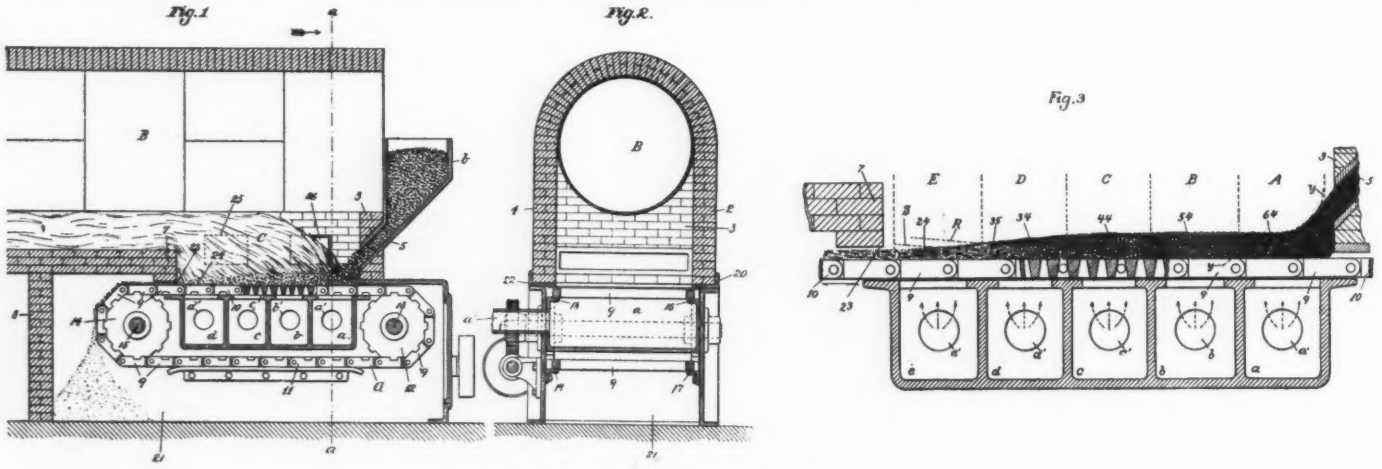
At the Empire mill it had been found that by keeping the surface of the dies, by false bottoms, as near as possible to the bottom of the screens, the batteries were made more efficient. The object is to cause more pulp to be dashed against the screens when the stamps fall. For the same purpose the mortars at the Penobscot mill were made narrower. The result at the Penobscot mill has proved that both have added to the effectiveness of the batteries, and that a greater amount of rock can be crushed in a given time in mortars made after this pattern. While the Penobscot stamps are dropping about five tons of rock to the stamp are crushed in 24 hours. The mill uses 43,200 gallons of water in 24 hours, or three gallons per minute per stamp.

The metal is saved on silver-plated copper plates covered with gold amalgam. No quicksilver is put in the mortar. The grade of the plates is 1¾ in. per foot. The plates are 4×12 ft. There is one additional plate to each battery, 4×10 ft., over which the tailings run and one plate 5×8 ft. over which tailings from both batteries run. The tailings then pass through a sluice over 2,000 ft. long, which is lined with amalgamated copper plates. The battery plates are cleaned every day and the others as often as necessary. The amalgam is kept bright and soft, but not so soft as to run. The quantity of water is so regulated that the heavy material will not settle on the plates.

In December last the mill was started, and worked during the month 25 days; milled 1,150 tons of ore; extracted $3.91 per ton in bullion, the tailings averaging $1.30 per ton, saving 75% of the assay value. In January the mill ran 31 days, crushing 1,300 tons of ore; bullion extracted per ton, $3.85; average of tailings, 87 cents a ton; saved, 81½%. The cost of operating the mine and mill was as follows, per ton worked: December, mining, $1.44; milling, $1.10; general expenses, $0.31; mine improvements, $0.27; total, $3.12. January, mining, $1.56; milling, $1.02; general expenses, $0.09; mine improvements, $0.43; total, $3.10. February, mining, $1.38; milling, $1.18; general expenses, $0.83; improvements, $0.65; total, $4.04. February expenses were increased by cost of insurance and greater mine development. The cost of insurance amounted to 40 cents a ton for the month. In a few days less than three months there was produced from this property, mostly from the waste thrown into the stopes by those who formerly worked the mine, over $22,000 in gold.

THE COXE FURNACE FOR BURNING FINE COAL.

The acompanying illustrations show a furnace for burning the finer sizes of anthracite coal, recently patented by Mr. Eckley B. Coxe, of Drifton, Pa. Fig. 1 shows a longitudinal section of the grate on a larger scale. Fig. 2 a cross section, and Fig. 3 is a section of the grate on a larger scale. The furnace, it will be seen, has a traveling grate and a hopper feed, and is designed to keep a uniform, even layer of fuel on the grate, and to subject it to a varying or gradually reduced blast pressure during the successive stages of combustion, an arrangement which has been found most suitable for the kind of fuel named. The furnace consists, as shown, of the ordinary sidewalls and the boiler or other device to be heated, above, and the bridge-wall at the end. The under side, or floor, of the furnace-chamber C is formed of the upper run, 10, of an endless traveling grate, designated in a general way by G, and preferably composed of a series of similar grate bars, or sections, 9, pivotally connected and carried by the wheels 12 and 14, that are fixed on the two shafts 13 and 15, respectively. The ends of the several grate-bars are shown supported by guides, of which those for the upper run of the grate are designated by 16 and 18, while those for the lower run 11 are designated by 17 and 19, respectively. For protection of the ends of the grate-bars, and also for prevention of the fine fuel passing over the ends thereof, the side-walls of the furnace are brought over the grate-bar as shown in the sectional view, Fig. 2, the brick-supporting plates, 20 and 22, of the side-wall extending over the grate-bar by a distance equal to, or greater than, the width of the end-bar of the grate-section. Under the upper, or fire-carrying, run, 10, of the traveling grate is a series of air-supply chambers, a, b, c and d, which may be two or more in number, four of them being shown in Figs. 1 and 2, and five of them in Fig. 3. Each of said chambers is to be suitably supplied with air, which may be done by blowing the air thereinto by corresponding pipes, a′, b′, c′ and d′, shown in end view in Fig. 1. The divisional walls between the several air-supply chambers come up close to the under side of the upper run of the traveling grate, so as to practically close the chambers the one from the other, with the exception of a slight leakage insufficient in practice to materially affect the operation of the furnace.



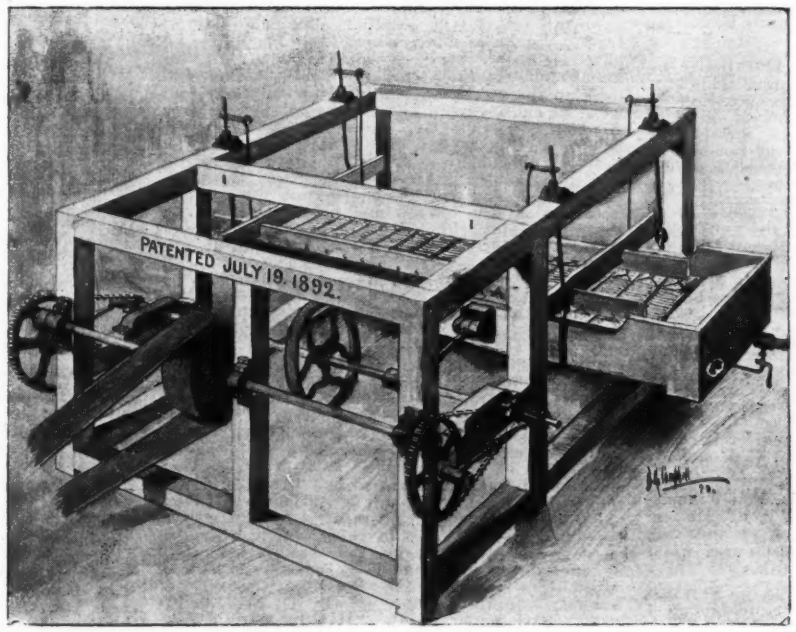
COXE'S FURNACE FOR BURNING FINE COAL.

The air supply can be regulated by means of valves, and the fireman, by occasional observation, can readily learn how to best regulate and proportion the admission of the blast.

For a fuller illustrattion of the principle of the invention reference is made to Fig. 3, where the travel of the fuel is divided into five spaces or divisions, A, B, C, D and E, corresponding to the five blast-chambers a, b, c, d and e, respectively. The division A constitutes the ignition area, the normal line of the ignition itself being represented approximately by the curved line y y, shown drawn through the fresh coal (or other fuel) at 64, where the mass of fuel is aerated by a moderate blast from the chamber a. Becoming ignited at 64, the fuel is carried forward to 54, over the high-pressure blast from the chamber b, and is here raised to a high state of combustion, which is continued with but little reduction, if any, over the next succeeding chamber, c. During this period the carbon is reduced by being burned up throughout the depth of the mass, until it is of too low a percentage to longer normally maintain the previous high rate of combustion under the high-pressure blast from the chambers b and c. Accordingly the air-blast of chamber d is reduced in pressure to a point sufficient to normally continue the combustion of the fuel in its reduced low-carbon condition, without chilling the same by over-blowing, but still to continue the combustion through nearly the whole depth of the mass of fuel, and thereby reduce the carbon to the lowest burning-point thereof, considering both the temperature of the mass and the admixture of non-burning mineral with the small residue of carbon. Continuing the process, the hot and slightly burning cinder at 35 is carried along and subjected to a still lower air-blast from the chamber e, which blast, being relatively small in quantity, is so carbonized by the burning carbon of the lower layers of fuel—below the cinder-line R—as to complete the combustion and leave the mass below the lower ash-line, S, without any fire therein. The described operations continuing while the mass of fuel is slowly carried along over the successive varying air-blasts, the cinder-line and the ash-line naturally assume inclined positions in the mass, as indicated in Fig. 3; and during the later stages of the process, this being considered in respect of any particular portion of the mass of fuel, the combustion is completed from the lower side of the mass upward, and the rate of combustion is so regulated as to be normal at each successive stage of the entire operation. By means of this process the smallest size of anthracite coals can be burned with the highest efficiency, and in a practicable manner.

THE HUSEMAN CONCENTRATOR.

The accompanying illustration shows a concentrator which has been tried with considerable success at several places, including the Pinetucky Mine in Alabama, which was recently described in the "Engineering and Mining Journal." The Huseman concentrator is designed to save the gold found in the sulphurets, although free gold can be saved as well. It consists of a frame about 6 ft. square and 30 in. high, with a box or plate about 32 in. wide and 6 ft. long, the box hanging suspended and moving through about 8 in. in its swing. An eccentric on the inside shaft gives a short shake motion to the box. The plate has a compartment which is water tight, except on the upper portion of the plate, which is made of steel finely perforated, through which fine streams of water come up and agitate the pulp as it flows over the plate. Across the plate are riffles about ⅜ in. high at the outer end and 1 in. high in the center. Beneath the plate is a half round box into which the concentrates fall through narrow slits or openings. These are closed by thin strips or keys which are to be withdrawn when the black sand shows an accumulation of sulphurets to such an extent that they may be carried over. At the head of the plate water is introduced through a 1-in. pipe to the chamber before spoken of. Connected with this pipe is a ½-in. pipe, entrance to which is controlled by a Fuller cock. The small pipe lies along the bottom of the concentrate box, and small holes are punctured at the interval of 6 in. The small streams loosen the concentrates, and they are carried out at the lower end of the box, and may be conveyed away by pipe constantly, or the faucet may be left closed at the lower end until filled. The small pipe is plugged at the lower end to increase the pressure at the small holes, and may be stopped up altogether if the concentrate box is always left open. A light frame fastened to the outer frame supports the chains which rest on the surface of the plate, and as the box moves back and forth agitate the pulp and hasten the off-flow of the lighter material.



THE HUSEMAN CONCENTRATOR.

The shake or stroke motion found to be necessary varies from 40 to 60 per minute. By raising the head of the plate the off-flow can be quickened. The pulp on leaving the flume should be distributed over as much of the head of the plate as possible. Experience at Pinetucky Mine shows that all quicksilver that escapes from the amalgamating table is caught in the concentrate box. The machine shown handling the pulp from 5 to 10 stamps requires less than one-half a horse power to run it. It weighs when boxed for shipment about 650 pounds. It can be knocked down and transported anywhere. These machines are made by John N. Denny & Co., of St. Louis, and are being introduced at a number of mines.

A Unique Bequest to Yale College.—The most unique bequest Yale College ever received has just been recorded by the will of Minot Booth, an eccentric citizen of Monroe. Several good-sized quarries, located mostly in Ansonia, Conn., are bequeathed to Yale for geological purposes. The quarries have a good practical value, as they are composed of common granite, available for building purposes. Mr. Booth, however, always had an idea that they would be invaluable for scientific researches, and so left them to Yale.

Cheap Smelting.—During the month of May the smelter of the Montana Ore Purchasing Company, of Butte, Mont., with the labor of 43 men, produced 777 tons of copper matte, containing 851,361 lbs. of copper. This is a new smelter, having been erected last winter. It hires a concentrator from the Boston & Montana company, in which it concentrates part of its ores, running two tons into one. It has two O'Harra calcining furnaces, each 95 ft. long and 8 ft. wide in the clear. The machinery for stirring the ore and carrying it through the furnace protrudes at each end, making the length over all about 125 ft. Only one man is required to take care of these furnaces and fire them. From 40 to 60 tons of ore and concentrates are calcined daily in each furnace. The amount of sulphur left in the ore is between 5 and 6%. The smelter has one blast and two reverberatory furnaces for reducing the ores.

RECENT DECISIONS AFFECTING THE MINING INDUSTRY.

Supreme Court of Iowa.

Abandonment of Coal Lease.

A lease, after giving a company the exclusive right to test, open, mine, and remove coal from certain lands, and to abandon the same if the coal should become unprofitable to work, continued as follows: "It is not the intention or expectation" of the company "to enter on the surface of any of the lands covered by this lease, but to work the coal through the now existing shafts," the company "reserving the right to use any part of said surface only in case of unforeseen contingencies which may arise, rendering it necessary and profitable to do so." There was no obligation to open new shafts before exercising its judgment to abandon, but only an obligation to work out the existing shafts. The provision allowing the company to "abandon the property and be relieved from obligation" did not require the cancellation of the lease of record, or the cancellation of certain mortgages executed by the company on its interest, before the relief should become effective.—(Van Meter versus Chicago & V. M. Coal Mining Company. 55 N. W. Rep., 106.)

Railroads to the New Mining Fields of South Africa.—United States Consul W. G. Hollis, at Mozambique, writes that the principal railroad in Portuguese East Africa is the Delagoa Bay Railroad, running from Lorenzo Marquez 56 miles to the Transvaal border. Beyond the border it is continued by the line of the Netherlands Railroad Company, which is being rapidly pushed through the gold fields. Of this section 72 miles are now open for traffic, making a total length of 127 miles. Nine miles more are ready for traffic, but seven miles are to be added before the next section is opened. About 93 miles from the border the line reaches the foot of the Eland's Berg, through which a tunnel is being driven. It will be nearly a year before the approaches are constructed and the tunnel open for traffic. Between the western side of the Eland's Berg and the gold fields the country is nearly level, and the construction of the line along this section will take but a few months. At 68 miles from Lorenzo Marquez a branch line 35 miles in length is being constructed to Barberton, a mining center. One mile beyond the border another branch called the Silati Railway is being constructed. It is to run in a northwesterly direction some 250 miles through a dry and arid country unfit for cultivation, but reputed to be a very rich mining field. The gauge of all these lines is 3 ft. 6 in. Although the branches are not in Portuguese territory, they are a part of the Delagoa Bay Railway system.

The Beira Railway is being constructed on a gauge of 2 ft., to be widened to 3 ft. 6 in. later on, from Fontesvilla, a town on the Pungue River, 42 miles from Beira, to Mashonaland. The first section is to Chimoia's Kraal, 120 miles from Fontesvilla and about 1,500 ft. above the sea level. It is expected that this section, which takes the line well out of the country infested by the tsetse fly, will be open for traffic in six or eight months. From Chimoia's Kraal this line is to be constructed through Massi-Kessi and Umtali, and its final terminus will be at Fort Salisbury, on the borders of Mashonaland.

PATENTS PUBLISHED IN GREAT BRITAIN.

The following is a list of the patents published by the British Patent Office on subjects connected with mining and metallurgy:

WEEK ENDING JUNE 24TH, 1893.

12,491 of 1892. Smelting Argentiferous, Zinc-Lead Ores. J. David, Swansea.
12,726 of 1892. Manufacture of Sulphuric Acid Obviating the Use of Leaden Chambers. E. J. Barbier, Paris.
12,768 of 1892. Briquette Fuel for Smelting Purposes. Robert Middleton, Leeds.
13,725 of 1892. Vacuum Elevator for Small Coal, Etc. C. Wenner, Zurich, Switzerland.
13,863 of 1892. Clip for Rope Haulage. G. H. Crabb, Fencehouses, Durham.
12,876 of 1892. Grates of Puddling Furnaces. G. Tomkinson, Bilston.

PERSONALS.

Mr. J. H. O'Connor, formerly of San Francisco, has been appointed superintendent of the Conlan mine, in Nevada County, Cal.

Mr. Frederick B. Scott has retired by friendly agreement from the firm of Bainbridge, Seymour & Co., mining engineers, of London.

Mr. M. Kerr has resigned his position as superintendent of the Consolidated Mining Company, Roanoke, Va., and will open an office as an engineer.

Mr. Thomas D. Robinson has been appointed Surveyor General of Colorado. He is a well known engineer, and was at one time city engineer of Denver.

Mr. C. H. Krause has completed the erection of the new plant of the Desloge Consolidated Lead Company, at Desloge, Mo., and has returned to his home at Lake Linden, Mich.

Mr. Bernard Feind, until recently consulting engineer to the city of Chicago, has opened an office in the Rookery Building, in that city for the practice of general hydraulic engineering.

Mr. Edmund Smith, for many years connected with the financial department of the Pennsylvania Railroad, has been elected first vice-president of the Pennsylvania Steel Company, and will have charge of that company's finances.

Mr. John Hays Hammond, the well known mining engineer, of San Francisco, Cal., passed through New York this week, on his way to the Transvaal, South Africa, where he will have charge of the mines and mills of the Barnato Bros. He will remain there for six months.

Mr. James Douglas, of Spuyten Duyvil, N. Y., president of the Copper Queen Mining Company, of Arizona, has recently received the honor of an award by the Council of the Society of Arts, of London, of the silver medal of the society, for his paper, read before the society, in London, in November last, on the "Copper Resources of the United States."

Dr. Theodore B. Comstock has recently been elected President of the Faculty of the University of Arizona. He retains also his title of Director of the School of Mines, and will give particular attention as heretofore to that school, although in his new position he will have full charge of the educational policy of the university. Dr. Comstock's many friends will be pleased to know that his hard and faithful work in Arizona has been appreciated.

OBITUARY

Anthony J. Drexel, the well known banker and philanthrophist, of Philadelphia, Pa., died on June 30th, at Carlsbad, Germany.

Thomas Whitely, a member of the San Francisco Stock Exchange, died June 23d last. He became a member of the board in 1884 and was active in business until several months ago, when he gave up business owing to ill health.

William F. Roberts, ex-geologist for the State of Arkansas, died at Hazleton, Pa., on July 1st, aged 84 years. Professor Roberts was born in Herefordshire, England, in 1809. In 1853 he was commissioned by the State of Arkansas to make surveys of the minerals of that State. During the "petroleum mania," in 1865, he was one of the proprietors and editors of the "Petroleum, Mining and Railroad Journal," published in Philadelphia, Pa.

SOCIETIES AND TECHNICAL SCHOOLS

University of Arizona.—The forthcoming catalogue of this university will announce some new and progressive features, which are largely the result of the experience and influence of the new president, Dr. Theodore B. Comstock, who has had much experience not only as an educator, but also as a practical engineer and miner.

Columbia College School of Mines.—Twenty students of the school are in Hazleton, Pa., under the charge of Professor Peel. They remain there for two weeks, during which time they pay daily visits to the Oneida mine, of Coxe Bros. & Co. A daily routine has been mapped out for the students to pursue during their stay. It consists principally of noting the methods employed in removing the coal from its raw state and preparing it.

Silver Convention.—The Denver Chamber of Commerce, in connection with other commercial organizations in Colorado, has sent out a call for a convention to meet in St. Louis, on July 17th, to which all the cities and representative commercial bodies in the South and West are invited to send delegates, the object being to prevent the unconditional repeal of the present silver law, and to work up public sentiment in favor of silver throughout the West and South.

Northwestern University of Illinois.—Henceforth mineralogy will be one of the branches of science taught at the university. The university has established a chair in that study, and has invited Prof. A. R. Crook, Ph. D., to fill it. Dr. Crook is a graduate of Wesleyan University. During his collegiate course he showed a marked aptitude for science, and went abroad to pursue his studies, applying himself for three years to post-graduate work in mineralogy and geology at the University of Munich.

Engineers' Club of Philadelphia.—At the regular meeting, June 17th, there was a discussion in reference to modern office buildings, which was opened by a short address by Mr. C. H. Roney, who described the methods of construction now in use. This was followed by a long discussion, in which attention was called to some defects, notably the insufficiency of the transverse bracing in the frames of many buildings. On the same day a part of the members made a visit to the Wellman Iron and Steel Works, at Thurlow.

Geological Society of America.—It is announced that the fifth summer meeting of this Society will be held August 15th and 16th, at the University of Wisconsin, in Madison, Wis. As the World's Congress of Geologists will meet in Chicago, August 24th, a number of foreign scientists are expected to be present at the Madison meeting and some of them will present papers, so that a meeting of exceptional interest is expected. Members who desire to read papers should send in titles and abstracts not later than July 15th. The meeting will be followed by several excursions, including trips to the Dells of the Wisconsin, to Devil's Lake and to the Lake Superior region.

Association of Engineers of Virginia.—The summer meeting was held on the afternoon and evening of June 30th at the Hotel Rockledge, on the top of Mill Mountain, 850 ft. above the city of Roanoke, and overlooking for many miles the broad valley in which it is situated, making a most attractive spot for a summer's day meeting. Six new members were declared elected. In his annual address, the president, Charles S. Churchill, took up the subject of the development of Southwest Virginia, especially of the mineral resources. After his address Mr. Churchill referred to his paper, read last year, before the association, on the "Establishment of a U. S. Weather Signal Station at Roanoke." After reading some additional information and correspondence on the subject, a resolution was offered and passed urging upon the proper authorities the establishing of a signal station for the Valley of Virginia, in the vicinity of Roanoke.

Mr. R. P. C. Sanderson presented a paper on the "Proper Method of the Disposal of Sewage and Household Waste in Isolated Buildings Where No Drainage System Can Be Made Available."

Mr. Jas. H. Fitts, in his paper on "An Evaporative Surface Condenser," described a new form of condenser built by himself at the Virginia Agricultural and Mechanical College, at Blacksburg.

At the evening session Mr. Wm. M. Dunlap read a paper on "Brick Pavements," giving a detailed description of the methods used in paving the streets of Roanoke with vitrified brick. Considerable discussion followed this paper, and was followed by a still more animated one on "Municipal Building Laws." As a result a committee was appointed to draft a set of rules, which, after discussion and approval by the Association, shall be offered the city council as what constitute a complete set of building laws for the city of Roanoke. In the absence of Mr. H. W. Newby, author of a paper on the "Improvement of Virginia Highways," the secretary read for him this discussion. The writer's main aim was to advocate the use of convict labor, under the direction of competent road engineers, as the only solution of the problem for the sparsely settled districts of Virginia, where the present road laws are an absolute failure. A committee was appointed to take up this question in detail and to frame, for presentation before the State Legislature, a suitable bill embodying the Association's views on the question.

INDUSTRIAL NOTES

The United States Car Company has started up its rolling mill, at Anniston, Ala.

The Lake Shore Iron Works, Marquette, Mich., recently shipped a large ore crusher to the Minnesota Iron Company.

Park, Brother & Co., Pittsburg, Pa., are building an addition to their mill, which will have one 14-in. and one 24-in. train of rolls.

The Burden Iron Company, Troy, N. Y., has elected James A. Burden, president; John L. Arts, general manager; Nicholas J. Gable, secretary.

The Springfield Coil Boiler Company has been organized, with $10,000 capital, at Springfield, Mass., to build a pattern of boiler invented by Dr. Cushing, of that city.

The Meekins Packard Company, Springfield, Mass., is building a triplex pump to be run by a Perot electric motor for the shops of the Worcester Institute of Technology.

The stockholders of the Pennsylvania Steel Company will hold a meeting at Steelton, Pa., August 15th, to vote on the proposed plan of reorganization and new issue of bonds.

The Watts-Campbell Company, Newark, N. J., is building several large compound engines, including one of 2,500 H. P. for the Fall River Iron Works, at Fall River, Mass.

The Heine Safety Boiler Company, of St. Louis, has a contract for furnishing seven Heine boilers, aggregating 1,750 H. P., for the Union Depot Railroad Company, St. Louis, Mo.

The Girard Foundry Company, Youngstown, O., at a recent meeting, elected H. B. Shields, president; Thomas Parrock, vice-president; Frank Williams, secretary and treasurer; W. J. Wallace, general manager.

The Nashua Iron and Steel Company, Nashua, N. H., at its annual meeting, recently, elected Aretas Blood, president; H. Adams, W. D. Cadwell, V. C. Gilman and J. D. Chandler, directors; E. F. Chandler, secretary.

The Bay View mills, of the Illinois Steel Company, in Milwaukee, Wis., closed down on June 30th. About 2,000 men are thrown out of employment. The steel mills of the company, at Joliet, Ill., were closed on June 30th.

The Berlin Iron Bridge Company, East Berlin, Conn., is building a new machine shop for the Coe Brass Manufacturing Company. The building will be of iron, with corrugated iron roof, 300 ft. long, 40 ft. wide and two stories high.

The Lone Star Iron Company, Jefferson, Tex., has been placed in the hands of a receiver on account of the difficulty in realizing on its assets. It is stated that the assets exceed the liabilities, and the company hopes to be able to resume before long.

The Rock Hill Coal and Iron Company, owning two blast furnaces, at Rock Hill, Huntingdon County, Pa., has ordered the furnaces banked, to remain so for a year, and discharged its hands, except a few of the chief officers, who are reduced to half pay.

The Shelby Steel Tube Company, Shelby, O., is now making steel tubing from ⅛ in. to 2¼ in. in diameter and as light as No. 28 gauge. It was at first believed that it would not be possible to make this class of tubing smaller than ⅜ in., or larger than 1¾ in.

The Mims Iron Works Company has been organized in New Orleans, with William K. Wilson, president; A. L. Center, secretary and treasurer; Gaston F. Cuculu, vice-president and manager. The new company will operate the Cuculu and Edwards foundries.

The firm of Morris & Bailey, steel manufacturers, in Pittsburg, has been incorporated as the Morris & Bailey Steel Company, with a capital of $100,000. The new company has begun to put up new works at Wilson station, near Pittsburg, to which the business will be removed.

The Pittsburg Reduction Company has, it is said, contracted with the Niagara Falls Power Company for 6,500 electric horse power, for use in a new aluminum plant to be erected at Niagara Falls. It is understood the Reduction Company will use principally material from the Bauxite banks, of Alabama, in the plant at Niagara Falls.

The Muskegon Iron and Steel Company, of Muskegon, Mich., went into a receiver's hands on June 30th. Assets and liabilities are not obtainable, the receiver being at work on the list. The company has a paid-up capital of $200,000, and last January reported debts of $160,000; credits, $20,000; real and personal property, $316,000.

The Okonite Company, Limited, has just issued its price list No. 6, which is a handsome little pamphlet of 56 pages, with an attractive illustrated cover, showing the company's trade mark and illustrating the uses to which okonite is put. The catalogue contains much information in relation to okonite and its uses, and is of interest to all who have to do with telegraph or electric light wires and their management.

Speer, Whites & Co., of Pittsburg, Pa., one of the largest concerns of the kind, made an assignment on July 2d inst., to J. H. Speer, secretary of the company. The primary reason given for the assignment was that it was made to protect both the creditors of the company and the individual members. The total liabilities are placed at $60,000, while officials of the firm and conservative business men state that their assets can be no less than $250,000. These assets consist of sand works and land in Huntingdon, Westmoreland and Fayette counties, Pennsylvania.

The Executive Board of the American Federation of Labor, which has been in secret session in this city for several days, adjourned July 5th. After discussing for two days a new schedule of wages for the Amalgamated Association of Iron and Steel Workers, a compromise schedule was adopted. This compromise schedule does not, however, affect the men at Homestead.

While the Pittsburg manufacturers have not yet signed the scale, the millowners in the Eastern and Western districts are one by one agreeing to the Amalgamated Association wages. On the 5th inst., the Locust Point Iron and Steel Company, of Baltimore, Md., signed the scale. On the same date a delegate from Muncie, Ind., reported at the Amalgamated Association headquarters that the Midland Steel Company had signed the scale and that the White River Iron Company would sign before the end of the week. The Muncie Iron Company had asked for a conference,

MACHINERY AND SUPPLIES WANTED.

If any one wanting machinery or supplies of any kind will notify the "Engineering and Mining Journal" of what he needs he will be put in communication with the best manufacturers of the same.

We also offer our services to foreign correspondents who desire to purchase American goods, and shall be pleased to furnish them information concerning goods of any kind, and forward them catalogues and discounts of manufacturers in each line.

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GENERAL MINING NEWS.

The Southwest Silver Convention met at Silver City, N. M., on July 4th. Judge Fall, of Las Cruces, N. M., was elected temporary chairman, and Prof. Theodore B. Comstock, of Tucson, Ariz., temporary secretary. John Bell, of Silver City, delivered the address of welcome to the delegates. He was followed by ex-Governor Ross, of New Mexico, who spoke for about an hour on the silver question. The committees on permanent organization, rules and resolutions were appointed. At the afternoon session the convention was addressed by E. S. Stover, of Albuquerque, N. M. The following are the States represented: Arizona, New Mexico, California, Wisconsin, Michigan, Nebraska, Missouri, Colorado, and also Central America and Mexico. The convention concluded its work on July 5th. It was addressed by Governor Thornton, of New Mexico; H. B. Ferguson, of Albuquerque, N. M.; O. F. Heckelman, of El Paso, and Mr. Borden, of Albuquerque, N. M. The speakers advanced arguments in favor of the free and unlimited coinage of silver, and resolutions toward that end were adopted. The repeal of the Sherman bill is demanded, and the enactment in its stead of a law providing for the free and unlimited coinage of gold and silver at the ratio of 15·98 of silver to 1 gold. The convention adjourned to meet at Albuquerque, N. M., next fall.

ALABAMA.

Jefferson County.

Tennessee Coal, Iron and Railroad Company.—The miners at the Pratt mines, near Birmingham, held a meeting last week and passed resolutions demanding the existing scale of wages, based on 45 cents a ton. The company's proposition was for a basis of 40 to 42½ cents. A proposal that the men should continue at work pending a settlement of the question was rejected, and a committee appointed to confer with the company's representatives.

St. Clair County.

(From Our Traveling Correspondent.)

The Coosa River forms the eastern boundary line of this county, as also the eastern boundary of the Coosa coalfields. The western boundary is formed by the range of mountains known locally as the Blount Mountains, really an extension of the Cumberland range. At the northeastern corner of the county the river cuts through a spur of the Blue Ridge Mountains locally named Red Mountains, which range extend in a southwesterly course into the Coosa coalfields, described in the "Engineering and Mining Journal" in a recent issue. Almost parallel with the last-named range is another, locally named the Chandler Mountains. It is in these mountain ridges that the mineral wealth of St. Clair County is found, comprising red fossil and brown hematite iron ores, limestone, sandstone for building and coal. The most extensive bodies of brown ore are found in the Blount and Chandler mountains, while on Red Mountain is found the red fossil ore, and in the southern portion of the county occur the workable seams of coal mentioned before. The most extensive in surface area of the ore deposits are the red fossil, the outcroppings of which extend for a distance of more than four miles in a northeasterly course from a point a short distance to the southeast of Ashville, the county seat which is located in a valley known as Canoe Creek Valley, and near the base of Red Mountains. The ridge in which this ore occurs is from 200 to 300 ft. above the level of the valley. The rocks dip to the southeast at an angle of about 30°, and the outcrop shows on the crest and southeastern slope of the ridge. The outcrop is very pronounced, and the continuity very definite and determined; so much so that in many places the slope of the ridge is covered with a solid sheet of iron ore, and at one point in an old field, a fence averaging nearly 5 ft. in height and 3 ft. in thickness with a length of 300 ft. has been built of slabs and blocks of red ore entirely. Owing to distance from railroad transportation no work to determine the thickness of the stratum or to crosscut it has been performed, and the lumps of ore of which this fence is composed were all picked up on the surface of the field. Along the crest of another ridge, known as Putnam's, and extending for a short distance parallel to the main Red Mountains, the outcrop of a stratum of red ore is very bold, forming a comb and protruding several feet above the surface. Here the dip is in the same direction as in the main ridge, but nearly vertical, being about 55° from horizontal. At a point about the middle of this ridge an open cut has been made to expose the thickness of the seam, which, according to my measurements, showed nearly 6 ft. The following analyses of samples of red ore taken from the surface and a little below the surface outcroppings were reported by Jo. C. Guild, as Assistant State Geologist for Tennessee, as follows: No. 1, iron, 49·13; silica, 22·49; phosphorus, 0·325. No. 2, iron, 50·25; silica, 19·74; phosphorus, 0·265. No. 3, iron, 54·50; silica, 15·58; phosphorus, 0·315. No. 4, iron, 53·85; silica, 14·16; phosphorus, 0·299. No. 5, iron, 51·86; silica, 16·73; phosphorus, 0·267. No. 6, iron, 49·25; silica, 16·28; phosphorus, 0·293. The brown hematite ore in this section, as in every other in the South, occurs in pockets and the extent cannot be estimated because no work, even of a prospecting nature, has been performed, but the outcrop is very pronounced on a ridge extending in nearly the same direction as that in which the red ore occurs, but divided from it by a valley about two miles in average width covered with a very heavy growth of yellow pine timber and locally known as the timber belt which extends for some 60 miles in a southwesterly direction from the Coosa River. I copy the two following analyses from the same authority as those from the red ore strata: No. 1, metallic iron, 49·75; silica, 13·19; phosphorus, 0·583. No. 2, iron, 55·22; silica, 7·62; phosphorus, 0·238. The northernmost outcrop of this section of the Coosa coalfield occurs about six miles south of the town of Ashville, on Trout Creek at the base of a ridge and about 4 ft. above the creek, which shows a thickness of 24 to 30 in. dipping slightly east of south at an angle of 15°. A stratum of slate overlies the coal seam and fireclay occurs below it. The following analyses from samples taken at this point and another outcrop in the neighborhood show: Volatile matter, 27·35 to 30·22; fixed carbon, 66·40 to 65·32; ash, 6·25 to 4·46. Sulphur separately determined, No. 1 — 1·20 = No. 2 — 1·35. Analyses of coke made in laboratory from these samples show: Fixed carbon, 91·41 to 93·61; ash, 8·59 to 6·39. The following analysis was made by the same authority of the limestone found on the northwest slope of the main red ore ridge: Calcium carbonate, 84·23; magnesium carbonate, 9·40; insoluble matter, 5·21. Another from a sample taken from the northwest slope of a ridge in the same neighborhood locally known as Beaver Mountain, gave the following result: Calcium carbonate, 95·45; magnesium carbonate, 2·03; insoluble matter, 1·35. Below this last was found a coarse-grained stone resembling marble, much of which has been used in building the locks and dams on the Coosa River near by. An analysis of this showed: Calcium carbonate, 97·18; magnesium carbonate, ·96; insoluble matter, 1·11. A projected railroad for which a charter has been obtained receives a great deal of interest in St. Clair County. The preliminary survey locates the line from near Sheffield, Ala., or deep water on the Tennessee River, to La Grange, Ga., a distance of about 275 miles, crossing St. Clair County and the Coosa River, near Lock 3, thence crossing Calhoun, Cleburne and Randolph counties, in Alabama.

ALASKA.

(From an Occasional Correspondent.)

The Alaska season has opened with better prospects than for some years past. The Alaska-Treadwell company is working at its regular rate, and is making some needed improvements in ventilation in the underground workings.

The Alaska Mexican company is putting up a 60-stamp mill, which was furnished by Fraser & Chalmers, and put up under the charge of Mr. Hayes Mackay.

Mr. Keller, of New York, is prospecting some properties at Sumdum. The outlook seems to be good, as far as can be learned.

The Juneau Gold Mining and Milling Company is taking out considerable ore. This company lately put in an electric air compressor, which is doing very good work. The mill is not running yet, but will be started up as soon as the flume is completed.

The Norvell Gold Mining Company is operating its placers in Silver Bow Basin, and developing the quartz claims near Juneau, and at Bemer's Bay, 60 miles northwest. On both these properties Bleichert tramways for carrying ore are being put in, under the direction of Mr. A. C. Savage, engineer. The intention is to get these properties into shape so that they can be worked and the mill kept running through the winter.

ARKANSAS.

Marion County.

Warner Creek.—The zinc mines here are being worked extensively. A crusher is being put in to crush the ores and a compressed air plant to furnish power for the drills used in the mines. Mr. Frederick Hanger, of Little Rock, is largely interested in the plant.

CALIFORNIA.

Calaveras County.

(From our Special Correspondent.)

The Stickel Mine, Shingle Springs.—The old hoist at the old mine has been sent to the new mine, at Shingle Springs, El Dorado County. A hoist to go 2,000 ft. is now in operation. It is run by water power and operated by two small hand levers, the shaft being equipped with the Fuller grips and safeties.

Mono County.

(From our Special Correspondent.)

Bulwer Consolidated Mining Company, Bodie.—Ore is being stoped on the intermediate cross-cut, 200 level. This week 122 tons of ore were crushed, the average battery assay being $26.28 per ton; tailings, $74 per ton.

Nevada County.

Brunswick Consolidated Gold Mining Company.—The superintendent of this company writes as follows from Grass Valley, under date of June 28th: The ledge in the 700-ft. west drift is improving as we advance. We have 6 in. of ore which looks fairly well, and several stringers coming in, which if they make, will give us quite a good-sized ledge. In the 600-ft. upraise there is a ledge from 12 to 18 in., which looks very well.

(From our Special Correspondent.)

The Omaha Mine, Grass Valley.—A cave occurred in the 1,400 level stopes on June 6th, by which the foreman of the mine and a miner suffered serious injury. The men were examining the ground when the cave occurred.

Placer County.

(From our Special Correspondent.)

El Trinidad Gold Mining Company.—The company has just incorporated with $3,000,000 capital, all subscribed, by the following directors and incorporators: C. N. Crittendon, R. Kelso Carter and W. R. Wiltermood, San Francisco; A. W. Dennett, of New York City; G. S. Montgomery, of Fruitvale.

COLORADO.

A late press dispatch from Denver states that the smelters of that city have perfected a warehouse scheme. Ore buyers were authorized to send out a notice that ore would be purchased and cash paid for gold, copper and lead; for the silver carried; a certificate or receipt will be given showing that the smelter holds a given amount of silver to the order of the miner. It should cause the re-opening of mines employing at least 5,000 men and a partial railway and smelter revival.

A press dispatch from Denver, Colo., dated July 5th, gives the following interview with Mr. David H. Moffat, one of the most prominent mining men in the State: The smelters will resume the purchase of silver ores in a few days. I think the outlook is considerably better than it was a week ago. A very noticeable reaction seems to have taken place, as indicated by the strong advance in the price of silver bullion. I expect to see it go to 86 cents inside of 30 days. I notice that France is beginning to protest against the action of the foes of silver, and that will help us. Silver shipments from New York show that there is a market somewhere. We feel decidedly better. We shall shortly resume work at our mines. There will be very little profit in it with silver even at ·80, but it will pay expenses. A better feeling is reported generally. The miners of the State are inclined to accept the situation cheerfully. The feeling of despondency has given place to one of confidence that affairs will right themselves in due time.

Boulder County.

Ninety-Three Mining Company.—This company has been organized by J. R. White, H. L. Haines and H. R. Deacon, to operate the Governor group of mines, in Boulder County. The general office is in Philadelphia.

Springdale Gold.—This company has opened an office in London recently. A report from a mining engineer, who recently examined the property, says that a new working 125 ft. west of the main shaft has uncovered a body of ore 2½ ft. thick, and of good quality. Samples from this vein have shown high assays, but no large quantities have been worked as yet.

Springfield Gold Mining and Milling Company.—This company is placing a block of shares in London as noted in our London stock market letter. Mr. T. B. Marshall is the London representative of the company and its office in that city is at No. 20 Abchurch Lane. An elaborate report on the Rip Van Dam and the Alden mines, owned by this company, has been made by William M. Rule, for the company, which is published in their London prospectus. The company's mines are at Springdale, in Castle Gulch, in the Central mining district, and, it is claimed, have the advantage of abundant supplies of fuel and water. A shaft sunk 91 ft. on the Rip Van Dam and a tunnel run 100 ft. from the gulch are said to show excellent ore. The company has expended a considerable amount in developing the mine. The ore is telluride of gold with some free gold, and has shown high assays. On the Alden mine the lode has been developed by a tunnel 310 ft. long, and this tunnel is to be extended until it meets the Rip Van Dam vein. The company has a mill site about five acres near the main shaft of the Rip Van Dam.

Clear Creek County.

Florence Gold Mining and Milling Company.—This company has been organized to operate mines in Clear Creek County. The capital stock is $500,000, and the incorporators are J. O. Hallowell, W. T. Nesbit, E. A. Williams and J. H. Coker.

Fremont County.

Union Pacific Mining and Milling Company.—This company has been incorporated to operate mines in Fremont County. The office will be in Colorado Springs. The capital stock is $1,000,000, and the incorporators are R. H. Magee, D. G. Smith, G. W. Cook and W. J. Foster.

Gilpin County.

(Reported for the "Engineering and Mining Journal.")

Alps Mining Company.—This property, which is now being worked under a lease, is paying ex-

penses but no dividends. The ore is free milling gold quartz which is treated at local stamp mills. It yields from 2 to 5 oz. gold per cord; the gold is worth about $15 per ounce. The treatment charged is $10 per ton. As the mine is located two miles from the stamp mills, it costs $9 a cord to deliver it to the mills; there is also some smelting ore in the mine which runs from 2 oz. to 8 oz. gold per ton and from 7 to 30 oz. silver; the gold in the smelting ore brings $19 an ounce and the ore nets the leasers from $40 to $175 per ton. This ore is treated by the Denver smelters, whose treatment charges are $10 per ton; $2 per ton is paid for freight; the copper in the ore, which runs from 1 to 7%, is paid for at the rate of 80c. a unit. The main shaft on this property was 740 ft. in depth, but a winze 360 ft. west of this shaft is now down 110 ft.; all of the pay ore is coming from this winze at present. The vein runs nearly east and west. The pay streak varies from 4 in. to 4 ft. in width. Thirteen men are being worked in the mine at present. A brief description of how the mine is being worked will prove interesting. The ore shoot dips west. On the surface it is about 100 ft. east of the main shaft, but at the 700-ft. level it is 360 ft. west of it. As the expense of drifting from the main shaft to the pay ore, some 400 ft.—$7 or $8 a foot—would be excessive, it was determined to sink a winze and use the hoist over the main shaft. Sheaves were placed in the 650-ft. level and the cable run over them to the winze; the ore is thus drawn out to the surface. Mr. J. O. Taylor is superintendent of this property as well as one of the leasers.

Gunnison County.

Ohio & Colorado Mining and Milling Company.—This company has been incorporated, with $1,500,000 capital stock, to operate mines in this county; the incorporators are A. Teachout, W. H. Ryder, I. B. Cameron, J. S. Kellogg and A. R. Teachout.

San Miguel County.

Shipments of ore and concentrates from Telluride for the week ending June 30th amounted to 671 tons; total shipments since January 1st are 10,028 tons.

San Miguel Consolidated Mining Company.—At the annual meeting, in Telluride, recently, the following officers were elected: President, James Campbell; secretary and treasurer, H. R. Newcomb; directors: James Campbell, W. F. Reed, Louis Fusz, St. Louis, Mo.; Elton Hoyt, D. Denty, O. M. Stafford, Cleveland, O.; B. J. Wertheimer, Chicago; Ralph King, New York; S. A. Bailey, Telluride, Colo. The company now has 120 stamps running at its mill, on Bear Creek.

FLORIDA.

Columbia County.

Fort White Phosphate Company.—This company is putting up a plant to furnish electric light at its mines. The plant will also furnish power to the Perrin and the Pitts Mining Company.

Marion County.

Foote Commercial Phosphate Company.—This company has recently put in a Mayfield washing and drying plant, and has commenced operations, mining on a large scale.

GEORGIA.

Lumpkin County.

Cavender's Creek District.—This district, which is a comparatively new one, is attracting a good deal of attention, according to the Dahlonega "Nugget." The Pigeon Roost belt, which has been famous in Georgia mining, is believed to run throughout this district. The principal mine at present is the Jumbo, which is owned by Judge Murray, A. G. Sharp, H. B. Hooper and Dr. Pugh. This mine was recently examined by a mining engineer from Colorado, who has made a favorable report and is to be developed as soon as a supply of water can be secured. This will be obtained by running a canal about half a mile. The vein is now being opened by a tunnel run into the side-hill; as far as prospected it varies from 6 in. to 2 ft. in thickness and assays from $13 to $70 per ton.

IDAHO.

Owyhee County.

De Lamar Mining Company, Limited.—The following is the official return for the month of May: Crushed during the month, 2,925 tons; bullion produced in the mill, $73,495; estimated value of ore shipped to smelters, $7,000; miscellaneous revenue, $685; total revenue, $81,180; total expenses, $38,625; profit for the month of May, $42,555. The following details of the mill work are given: Dry tons panned, 1,018; average assay value, 3·48 oz.; average salt used, 14%; average value of tailings, 3·5 oz.; average saved, 91%; number of dore bars produced, 47; number of ounces fine silver, 36,005; number of ounces fine gold, 34·7; batteries in service, 27 days; pans in service, 28 days.

Telegraphic news from Boise City states that the mining camps of Silver City and De Lamar are not seriously affected by the decline in the prices of silver, owing to the fact that a large portion of the product of the mines consists of gold. The prospect is that none of the mines will shut down. In an interview Captain Plummer, general manager of the De Lamar mines, stated that "the price of silver affects us very little. We can work profitably."

KANSAS.

The strike of the coal miners in Eastern Kansas still continues and over 10,000 men are now out. It is said, however, that there is a good deal of dissatisfaction among the men. Many of the single men have left the mine, in Crawford and Cherokee counties, and have gone to the Indian Territory, where there is a considerable demand for skilled miners. It is said also that the negroes, of whom a large number are employed in Eastern Kansas, are dissatisfied and unwilling to continue the strike. Some of the coal operators have announced their intention to resume work with non-union men and trouble is feared.

MAINE.

Waldo County.

The granite quarry at Mosquito Mountain, which is the oldest quarry in Maine, is now being actively worked, and large shipments of paving blocks are being made; probably over 1,000,000 will be sent out this season. This quarry, which is now owned by Hayward Pierce, was first worked 65 years ago.

MICHIGAN.

Copper.

Arnold Mining Company.—According to the Houghton "Mining Gazette," the Arnold shaft is now down a little over 500 ft. About 250 ft. of drifting on the lode has been done. Sinking will be stopped for a time and drifting at the fourth level started both east and west. The work will be pushed two shifts. The boiler plant is to be increased and work pushed as rapidly as possible. From the surface, as far as the shaft has been sunk, to a little below the 500-ft. point, the lode has shown up well for copper for the entire distance. What drifting has been done has been in satisfactory ground, and has furnished a good class of stamp rock. It is now the intention of the management, says the "Mining Gazette," to open up the fourth level, both east and west, some little distance, and, if the ground proves as good as in the levels above, to drive an adit in from the lake shore on one of the fissure veins.

Calumet & Hecla Mining Company.—Drifting on the Osceola amygdaloid from the cross-cut in No. 4 Calumet is still going on, and the lode shows no signs of falling off in quality.

Centennial Mining Company.—At this property the cross-cut on the way to the Osceola amygdaloid is now in something over 750 ft., and if the lode maintains the same course and distance from the conglomerate through the Centennial property that it does in the Osceola and Calumet & Hecla mines, then, says the Lake Linden "Times," the cross-cut must be up to within a few feet of the vein.

Franklin Mining Company.—The mine production was reduced during June by the giving away of the stamp mill foundation. It was 175 tons, against 151 tons for May and 190 tons for June, 1892. This makes 1,062 tons produced since January 1st, against 1,191 tons last year, a decrease of 129 tons.

Quincy Mining Company.—This company produced 701 tons of "mineral" in June, against 700 tons in May and 500 tons in June, 1892. This makes 4,140 tons produced for the six months, against 3,002 tons last year, an increase of 1,138 tons.

Wolverine Mining Company.—At the north end of this company's mine, not far distant from the boundary with Kearsarge, the lode in several places is reported by the Lake Linden "Times," to be looking well. From this quarter a good quality of rock is being extracted.

Iron—Marquette Range.

An Ishpeming dispatch dated June 27th says: Superintendent Frank P. Mills received orders to-day to close down the Cleveland and Cliffs shaft mines, June 30th. Consequently over 1,000 men will be thrown out of work. All mining operations will be suspended except at the Salisbury and Firth mines, which have contracts to fill. The shut-down is ordered for an indefinite period. Mines will not resume active operation until the state of the ore market warrants it. Over 3,000 miners have been discharged in this district in the past 30 days.

MINNESOTA.

Iron—Mesaba Range.

A well informed expert writes us that the miners on this range are getting ready for 1894, and some claim that this range would be able to ship from 60 to 70% of the supply of Lake Superior ore next season, if the railroads and docks were able to handle it—which they are not, however. A number of tracts have lately been taken up by strong operators, such as Colby, Wetmore, Rockefeller and others, and Mr. Corrigan, of Cleveland, recently bought, for $40,000, a 40-acre tract, estimated to contain 2,500,000 tons of No. 1 Bessemer ore developed by pits. The present question on the Mesaba seems to be not, What must be done to find ore? but, What can be done with the ore that is found? Our correspondent adds: "This is the time to pick up iron ore property for a song, as the poor operators now have their royalties to meet, and in the present state of the market ordinary commercial interests will not lend assistance, so that many prefer to sell for a song rather than forfeit their finds to the original fee-owners."

MONTANA.

Jefferson County.

Elkhorn Mining Company, Limited.—The official report for May states that 2,664 cars, containing 1,342 tons of ore, were broken out. Of this amount the larger part came from the 1,250-ft. and 1,450-ft. levels. On the former the south end back stope has 8 ft. of ore, assaying 35 oz. At the north end of the main stope the vein is 3 ft. wide and assays 40 oz., with some bunches of rich lead. On the 1,450-ft. level the upper intermediate drift, south of the shaft, discloses ore which is 6 ft. wide and assays 75 oz. silver and 8% lead. In the lower intermediate the ore is 8 ft. wide and assays 65 oz. silver and 7% lead. The product of these two drifts is all of the sulphide class, and is shipped to the smelter for reduction. Both places show an increased size of the ore body. Prospecting was continued on the usual scale, and at a point 210 ft. from the shaft (1,050-ft. level) the upward extension of the ore was cut in the inside stope on the 1,150-ft. north drift. The average value was 70 oz. silver and 3½% lead. The breast is still in pay ore. South of the shaft (1,550-ft. level), previously reported, 476 ft. Advanced in May, 139 ft. Total length June 1st, 615 ft. After passing through the first ore body reported last month the drift ran through barren ground to a point 585 ft. from the shaft. Here several bunches and bands of high-grade sulphide ore, varying from 6 in. to 30 in. wide, were encountered. This is probably the downward extension of the rich inner ore body met with on the 1,450-ft. south level. The drift will be continued southerly until a change of formation occurs. The mill ran steadily during the month. A new fire end section was put on the dryer furnace. The machinery generally is working satisfactorily.

Silver Bow County.

(Reported for the "Engineering and Mining Journal.")

All the copper mines are working in full force, and are able to produce easily as much ore as the different smelters can treat. The Butte, Anaconda & Pacific Railroad Company has, after a good deal of trouble, secured a right of way through the city, and have some men at work grading for switches to some of the mines owned by the Anaconda company. With this road completed the Anaconda company will be independent of the Montana Union Railroad.

Butte.—The unexpected drop in the price of silver has caused nearly all the silver mines to suspend operations. At the Alice all underground work except pumping has been stopped. At the Lexington all work ceased June 30th. At the Moulton the situation is the same. At the Gagnon mine, owned by the Colorado Smelting and Refining Company, the miners have been ordered to lay off.

NEVADA.

Elko County.

Belle Isle Mining Company.—The latest weekly official letter of the superintendent says: The west intermediate cross-cut, above the 250-ft. level, has been extended 6 ft., showing some bunches of crushed ore. The stopes have yielded a little less ore than usual.

North Belle Isle Mining Company.—At the annual meeting of this company, held last week in San Francisco, Cal., the old management was re-elected, with E. Scott, as president; J. W. Pew, secretary, and R. C. Catlin, superintendent. The company has a debt of $7,916.

(From our Special Correspondent.)

North Belle Isle Mining Company, Tuscarora.—At the annual meeting of stockholders held this week, at which 19,868 shares were represented, the following officers were elected: E. Scott, president; F. A. Berlin, vice-president; and G. W. Grayson, M. J. McDonald and P. C. Hyman, directors. J. W. Pew was re-elected secretary and his financial statement showed an indebtedness of $7,916.

Storey Company—Comstock Lode.

Crown Point Mining Company.—The latest weekly official letter says: We are still opening out on the quartz encountered in the north drift from the west cross-cut, 150 ft. south of the shaft, on the 400-ft. level, and are saving from there between four and five tons of ore per day. We have been stoping on the first, second and third floors, on the 700-ft. level, for "gold," which is being sent to the mill for a milling test. We have done no work on the 1,100-ft. level during the week. We shipped to the Mexican mill for reduction during the week 220 tons, 240 lbs. of ore, the average battery sample of which was $16.87 per ton. We have also shipped to the Mexican mill for reduction during the past week 161 tons, 840 lbs., of "gold" ore (for the test), the average battery sample of which was $8.47 per ton.

Justice Mining Company.—The latest weekly official letter says: The south drift from the north stope, on the 822 level, has been extended 7 ft., and is now out a total of 210 ft. The face is in low-grade quartz. We are taking out 10 tons of ore per day from the north and south stopes, on the 822 level, the car samples of which average about $20 per ton. Shipped to the Washoe mill for reduction during the week 149 tons of ore, the average battery sample of which was $19.18.

Mexican.—The Mexican mill, on the Carson River, lately started eight stamps on a test run of Crown Point ore. Two experts are running the

concentrators. Two hundred tons will be the amount experimented with. There are eight more of the Mexican stamps crushing Crown Point ore, which is worked in pans, and six pans running on tailings. There are 14 men working in the Mexican.

Savage Mining Company.—The latest weekly official letter says: On the 1,100 level we continue to extract some ore of fair grade, east of the old stopes, from the second floor up to the 13th floor. During the week we have hoisted 168 cars of ore from this level; car samples average $29.68. We shipped to the Nevada mill 87½ tons, and milled 120 tons; average battery assay, $23.25. On the 1,800 level the main north drift from the south boundary was advanced 12 ft., making its total distance 136 ft. from the face of the drift. East cross-cut 2 was started and advanced 13 ft.; face in hard quartz giving low assays.

(From our Special Correspondent.)

The following is the weekly tabulated statement of minerals extracted from Comstock mines, and milled, with the average car and battery sample assays, bullion shipments, etc.:

Mines.	Tons H'st'd	AvCar S'mple Assay.	Tons Mil'd	Av. Bat'ry Assay.	Bullion for Week.	Bullion shipped.
Belcher	[1]37	.....	.....	.....	.....	.....
C. C. &Va.	272	29·86	495	28·19	.....	.....
Crown Pt.	.....	.....	[2]220	16·87	.....	.....
			161	8·47	.....	.....
Justice....	70	20·00	149	19·18	.....	.....
Potosi.....	603	24·75	600	22.28	.....	[4]431 lbs.
Savage ...	[3]168	29·68	120	23.25	.....	.....

[1] Fair grade ore. [2] Two shipments, the latter of which is for test purposes. [3] Cars. [4] Crude bullion.

Crown Point Mining Company.—During the week the work of stoping on the 700 level for gold ore has progressed. The shipment of 161 tons, 840 lbs. of gold ore to the Mexican for a test run will prove an interesting experiment. Eight stamps in the mill are drifting on this ore and two experts are running the concentrators. There are eight more stamps engaged on Crown Point ore, which is worked in pans with six pans additional running on tailings.

Justice Silver Mining Company.—The ore being hoisted is from the north and south stopes, 822 level, the average grade being very fair.

Kentuck Mining Company.—This week 4,381 lbs. of concentrates have been shipped from the Vivian mill to the Selby works, at Vallejo Junction, for reduction.

West Consolidated Virginia & California Mining Company.—The annual election was held during the week, there being 92,098 out of 104,265 outstanding shares represented. The following gentlemen were elected officers for the ensuing year: M. W. Fox, president; Geo. P. Thurston, vice-president; A. A. Carvill, R. V. Collins and W. T. Baggett, directors. P. H. Andross was re-elected secretary. The board, by resolution, decided that stockholders who through illness had allowed assessment No. 1, of 25 cents, to fall delinquent and had been closed out, could have the amount of stock as bought in by the board at delinquent sale. The election, though not very important, was interesting, from the fact that just two years ago the Comstock "ring" persuaded Oscar Steel to act as their decoy, and the combination obtained from Superior Judge Wallace an injunction which brought everything in regard to the property to a standstill. The more or less constant fight to gain possession of this property by the "ring" has been recorded by the "Engineering and Mining Journal." Work will be resumed in the mines, and as the ore runs about 80% gold, the heavy decline in silver will not affect this property.

Yellow Jacket Mining Company.—Active operations are in progress in No. 2 cross-cut, 1,100 level. There has been drifting north and south on the vein, and an upraise has been started on the ore, which is up 5 ft. above the timbers, showing good ore in the top. A winze is also being cut out, and sinking on the ore will begin early next week.

NEW MEXICO.

Grant County.

Alhambra.—This mine, at Alhambra, has a force of 20 men at work. The main shaft has attained a depth of 350 ft. The ground has been very hard and progress slow. Drifts are being run at the 300-ft. level which are showing well, says the Silver City "Enterprise." A stope of good ore is being worked on the 248-ft. level. The main shaft shows some ore in the bottom.

Taos County.

(Reported for the "Engineering and Mining Journal.")

The Gem and Ruby are now showing up well in red and silver, and development is being prosecuted as fast as possible. Some ore from the Mazzaroth tunnel was recently assayed which ran as high as 22 oz. of gold to the ton. The full extent of this pay chute has not yet been determined.

The Independence has some shipping ore on the dump, but the owners intend to do some more development work before doing any stoping.

Near Amizett, recently, a 4-in. vein of galena was found in a seam of quartz, a sample from which showed a large percentage of lead and 244 oz. of silver to the ton. The expense of this find is not yet known, as the vein has been traced only for a very short distance on the surface and very little work has been done as yet.

Surveys are being made for a ditch about 1½ miles long to bring water from the Red River side of the mountain to work the Wing placers, which are too high up above the Rio Hondo to take water from that stream. The Rio Hondo company has a force of men at work building boxes, etc., and making preparations for active work. Preparations are also being made to build a ditch and work the placer ground, owned by O. W. Tennant, along the Rio Grande at the mouth of Taos Creek.

The gold ore of Good Hope, 12 miles back of Tres Piedras, are receiving considerable attention and a number of sales of small claims have been made there.

Taos Mountain Mining Company.—This company, under direction of the president, Capt. Frank D. Baldwin, and Superintendent Rucker, is prosecuting development on a number of different claims. Two levels, which are being run from the Lone Star shaft, are reported in good milling ore, which runs about 20 oz. silver and from 0·75 to 1 oz. in gold with some iron and copper. The vein at present is about 7 ft. between walls; the vein matter being nearly all quartz. The company has contracted for a 20-stamp mill.

OHIO.

Jackson County.

Alma Coal Company.—This company is opening a new mine on the Lucas tract, near Glen Roy. Mr. C. K. Davis is superintendent. The tract acquired by the company includes about 225 acres and the opening is being made on a large scale.

PENNSYLVANIA.

Anthracite Coal.

The committee appointed by the Schuylkill Coal Exchange to fix the rate of wages to be paid miners and mine laborers for the last half of June and the first half of July have decided on a rate of 1% below the $2.50 basis, or an increase of wages of 2% over last month.

The Board of Mine Examiners.—E. B. Coxe, of Drifton; Jr. W. Scott, of Hazleton; Michael Mulligan, of Upper Lehigh, and Mine Inspector J. M. Lewis, met July 3d, inst., at Drifton, to complete the examination of the applicants for mine foremen's certificates. Following are the names of the successful applicants: William T. Jones, of Oneida; Patrick Somers, Hazleton; Richard J. West, Lansford; J. J. McNelis, Drifton; Henry Ernest, Derringer, and Christian Miller, Freeland.

Coke.

A dispatch from Uniontown says it is understood the large coke operators in the Connellsville region are going to make an agreement to put the price of coke down. This is made a necessity because of the strong competition of West Virginia fields. This competition was referred to last week in the "Engineering and Mining Journal," when the Illinois Steel Company's contracts for Pocahontas coke were noticed.

UTAH.

As was to be expected the drop in silver consequent upon the action of India carried consternation to the silver miners. Mine after mine has shut down, and if reports are true more will follow. Among those which have closed are the Petro, at Bingham; the Herkimer, at Eureka; the Bullion, at Stockton; the Swansea, at Silver City; the Alice and a number of the smaller and less fully developed mines. A great many others announce their intention of closing down if silver bullion continues to fall. The situation has, however, been much improved within the last few days by the rise in price to 75 cents per ounce. Meetings of the mine superintendents of Park City were held June 30th and July 1st, to discuss the situation. At the former meeting it was stated that the mines of the Park City district would be closed down unless there should be some radical change for the better in the silver market. The Salt Lake "Herald" says: The reaction which has taken place will steady the nerves of the mining men of the West, and prevent the closing down which has been contemplated. It advises the workmen to accept lower wages if the present rates cannot be continued, rather than be thrown out of employment to the shutting down of the mine.

Beaver County.

Horn Silver Mining Company.—According to the Salt Lake "Tribune," half the force at this mine will be laid off. The present force consists of 150 men. This action was caused by the refusal of the Denver smelters to buy more ore. For several months past the output has been at the rate of 100 tons daily.

Juab County.

Eureka Hill Mining Company.—In an interview John Q. Packard, of this company, stated that the company would continue work for the present and await developments.

Tintic Mining and Milling Company.—At the annual meeting recently the following officers were elected: President, F. S. Hadra; vice-president, F. A. Virtue; treasurer, J. R. Bowdle; secretary, C. J. Pence.

Salt Lake County.

Copper Refinery.—There has been a good deal of work done on the refinery. All the foundation work on the electrolytic plant crushing mill and boiler-house is now finished while the foundations of the converting plant are nearly completed.

Swansea Mining Company.—This company closed down its works on Tuesday, June 27th. The property has been a good producer this season, but the superintendent states that it is now impossible to dispose of ores, so that the shut-down was absolutely necessary. Contract work on the shaft will be continued.

Summit County.

Bullion-Beck & Champion Mining Company.—A suit for $20,000 has been brought against this company, by James Monaghan, who alleges negligence on the part of the defendants in employing an incompetent cage-tender, and in the construction of the shaft through which the cage passes. Monaghan was badly mangled by being caught between the cage and the wall on September 10th, 1890.

WASHINGTON.

Okanogan County.

(Reported for the "Engineering and Mining Journal.")

Bridgeport Mining and Milling Company.—This company is sinking a compartment shaft on Mineral Hill, near Conconully. The formation is granite and quartzite with veins of antimonial silver ore running through it with a general northwest and southeast direction. Samples have been taken out showing 20% lead and from 226 to 416 oz. of silver to the ton. The greatest depth yet attained on any of these veins is 100 ft.; the ore generally showing an improvement with depth. The company expects to put in additional machinery shortly and will sink its shaft to the 300-ft. level and then cross-cut to the main vein. There are three parallel veins within a space of 50 ft. which are expected to come together at the 100-ft. level. The No. 1 ore goes to Omaha, Denver and Tacoma, Wash., for treatment; the second class or concentrating cannot be moved yet on account of high freight rates, but within another year a railroad will come into the district. The camp has plenty of wood and water, and, in fact, everything to work mines cheaply; the winters short and mild; there are many good prospects owned by parties who are not able to develop them.

WEST VIRGINIA.

Fayette County.

Collins Colliery Company.—This company has been organized with a capital stock of $60,000 and privilege of increasing to $250,000, the officers being: Justice Collins, president; George M. Jones, vice-president and treasurer; John H. Lewis, secretary. The company's headquarters are at Lynchburg, Va.; the West Virginia office is at Glen Jean. The company has secured a tract of 1,000 acres on Dunlap Creek, on a branch of the Chesapeake & Ohio Railroad. The lands are underlaid with what is known as the Sewell coal seam, which is a heavy seam of good quality of coal. The company proposes to make openings at once.

McDowell County.

Knox Creek Land and Coal Company.—This company has been organized to mine coal on lands purchased on Knox Creek, near Gray. Austin Gallagher, of Orange, N. J., and Teofilo Gimbernat, of New York, are among the incorporators.

Panther Creek Land and Coal Company.—This company has been organized to mine coal near Gray, in this county.

Monongalia County.

Blacksville Oil and Gas Company.—This company has been chartered to sink oil and gas wells near Blacksville. The incorporators are Ira E. Hall, A. W. Moore, Henry Conklin and others.

Randolph County.

Roaring Creek Coal and Coke Company.—This company has been organized to mine coal and to build coke ovens near Roaring Creek. The incorporators are A. Bogey, George E. Waters, Robert C. Rudd, Brooklyn, N. Y.; Sydney D. Freshman and Teofilo Gimbernat, of New York.

FOREIGN MINING NEWS.

COLOMBIA.

Frontino & Bolivia Manufacturing Company, Limited.—The half-yearly general meeting was held in London, June 28th. The returns for the half year were the largest ever realized in the history of the company, being £54,725, against £53,632 in the previous six months. On the other hand the profit shows a marked decrease, being but £11,046, against £20,575 in the preceding half year. The decrease was due to increased expenses at the mines, which were charged to revenue account. At Silencio the sinking of the shaft below the 400-ft. level progressed fairly, and latest advices state that the load shows considerable improvement. The 400-ft. level south was commenced at Cecelia, the old mine was about abandoned and the Victoria Reina mine adjacent was opened. It is said, however, that the ore found was disappointing in quality. The board of directors ordered a dividend of 9d. per share, which makes 1s. 9d. for the half year, or at the rate of 17% per annum.

Gravel Gold Mines, Limited.—At the last meeting of the shareholders, held in London, the chairman stated that the reconstruction of the company had been a great success, and £5,000 will be left as working capital when all the calls are made.

ONTARIO.

Algoma Nickel Mines.

(From an Occasional Correspondent.)

Sudbury District.—We have had more capitalists, experts and representative mining men visiting this district already this season than for the previous 12 months. They were from England, France, New York, Philadelphia, Buffalo, Montreal, Duluth, Montana and other places. A local mining broker says that he has had several inquiries lately from some of the Western silver men, who may possibly turn their attention to nickel mining. Only for the financial troubles in the United States and England the sales of a number of nickel properties, which had been negotiated during the winter, would have been completed before now, and a good deal of new capital invested here. It is confidently expected, however, that these and other sales will be carried through, and also that the fine exhibits of the ores from this district at the World's Fair will induce a great many capitalists to come and see the mines.

The Copper Cliff, Evans, Blezard, Worthington and Murray mines are running full force, and the pay rolls for this month are the largest for a year. It is said that one of the companies has received more orders for matte recently than its present plan can turn out for the balance of the year.

QUEENSLAND.

Charters Towers.—The yield for March from 15,705 tons was 21,365 oz. 14 dwt. of gold, an average of 1·36 oz. per ton, making the output for the first three months of 1893 64,023 oz. 9 dwt. 10 gr. from 46,843 tons, as against 54,295 oz. from 46 086 tons dealt with in the first three months of 1892. So far, this year shows an increase of 757 tons and 9,728 oz., as compared with the corresponding period of 1892. The dividends also show an increase, being £77,637 for the first quarter of 1893, as against £52,800 for the corresponding period of 1892.

SPAIN.

In view of the decreased output of iron ore from the Bilbao district, some progress seems to have been made towards the supply of ore by the working of certain mines in the province of Andalusia, within a distance of some 40 or 50 miles from the port of Seville. The ore in this district is said to exist in enormous quantities, to be very pure, and to yield metallic iron of the high percentage of 55% to 65%. Messrs. William Baird & Company, of Glasgow, have already, the "Financial News" is informed, made arrangements for working on a large scale some mines in this district, and have taken a perpetual lease of properties belonging to the Pedroso Company, situated some ten English miles from the Cazala Station on the Merida-Seville line, from which station the distance to the port of Seville is about 57 English miles. The royalty is, we believe, about 7½d. per ton on all ore extracted, and it is reported they have already advanced the owners of the mines a considerable sum on account of future royalties. They are also to construct a railway from the mines to Cazala Station, and have arranged with the Merida-Seville Railway Company to carry their ore to Seville for four pesetas per ton. For the working of another group of mines, situated only about two miles from the Pedroso Station on the Merida-Seville line and 42 miles from the port of Seville, an English company is being formed privately, under the title of the Iberian Iron Ore Company. Analyses made in England show a high quality of ore, with the yield of 57 to 67% of metalic iron. It is stated that for a long time to come the ore can be got at by simply quarrying, and the cost of transport by rail to Seville is very small.

A vein of gold ore has been discovered near Aguilas. It has been examined by a number of Spanish and English mining engineers who have reported very favorably upon it.

Rio Tinto Company (Limited).—At the general meeting, held recently, the directors recommended that after writing off to debit of revenue account the amount of drawn bonds and depreciations, amounting in all to £119,393, a final dividend of 7s. per share be declared, making, with the interim interest paid in November, a total of 7% on the capital stock of the company. In addition, £83,881 was carried forward.

SOUTH AFRICA.

Witwatersrand.—The April output amounted to 112,053 ozs., against 111,474 in March, 93,252 in February and 108,374 in January. Total for four months, 425,153 ozs., against 360,015 ozs. for the corresponding season of 1891.

Witwatersrand.—Experimental boring on claims situated on the dip of the main reef, belonging to the South African Trust and Finance Company afford further proof of the continuity of the reef in depth. At a depth of no less than 2,300 ft. the diamond drill struck the reef where it was 7 ft. thick and showing visible gold. The ground is south of the Simmer and Jack and New Primrose properties, and the success of the experiment has created much interest at Johannesburg, as giving proof that the main reef goes down undisturbed to very great depth.

COLORADO ORE MARKET.

Denver. July 1.

(From our Special Correspondent.)

For the past two weeks the ore offered for competitive bid by the different public sampling works in this market only amounted to 335 tons; the ore received intended for public bid would probably exceed three times this quantity, but on account of the low and steadily falling price of silver, together with the fact that the smelters were all carrying large stocks of ore and did not care to increase their holdings, has resulted in these ores being stored for the present, as there is absolutely no market at the present writing for any kind of ores. The 335 tons sold was made up of heavy leads running low in silver, and straight gold ores running low in silver, both products bringing fair prices only.

Whether there is going to be any market for any kind of ores for the present is a question that the smelters will decide in a few days.

MINING STOCKS.

[For complete quotations of shares listed in New York, Boston, San Francisco, Aspen, Colo.; Baltimore, Pittsburg, Deadwood, S. Dak.; St. Louis, Helena, Mont.; London and Paris, see pages 46, 47 and 48.]

NEW YORK, Friday Evening, July 7.

There is nothing new to be said of the mining stock market this week, as nothing has occurred since our last report to cause a modification of the statements we then made. With the continued financial uncertainty, the decline in the price of silver, reports of silver mines closing down, of smelters declining to buy ores, etc., etc., *ad nauseam*, it is not to be expected that mining stocks would be in much demand just now. Still considerable inquiry of a quiet nature has developed of late. It comes from people who, as we stated last week, believed that silver has reached its lowest price, and who therefore consider the present opportunity a good one for the cheap purchase of mining securities. Actual business, however, has been small, only 4,300 shares being sold this week, against 11,750 last week.

The Comstocks continue absolutely neglected. Attention is called to the report of our San Francisco correspondent. In this market the only sales recorded in the official lists of the Exchange were 1,100 shares of Comstock Tunnel stock at 6@8c., and a $500 bond at 10c. on the $1.

The California stocks have also been very quiet. Of Brunswick Consolidated 200 shares changed hands at 4c. The latest letter of the superintendent of this company will be found in our mining news columns.

Late advices from the Standard Consolidated Mining Company's property are to the effect that the experiments with the electric plant have proved very satisfactory, but that regular operations have not yet started. There was only a two-weeks' run last month and the gross returns for that time amounted to $7,600.

Of the Colorado stocks Leadville Consolidated shows sales of 600 shares at 12@13c. There was a solitary transaction of 300 shares of Little Chief at 18c. A sale of 500 shares of Lacrosse at 4c. is reported this week.

Alice this week was traded in to the extent of 1,000 shares at 30c.

Horn Silver was quiet. There was a single sale of 100 shares at $2.75. This company has not been influenced by the decline in the price of silver to the extent that other companies have, owing to the fact that its ore is of a character which makes it highly desirable for fluxing. The demand for it from the smelters has not decreased appreciably; average assays show that it carries 37½% of lead and 28 oz. of silver to the ton, and the company expects that the increased value of the lead will fully offset the decline in the price of silver. The company will not shut down its mine.

The Victor Gold Mining Company, of Cripple Creek, has declared its regular monthly dividend (No. 5) of 5c. per share, or $10,000, payable at the office of H. R. Lounsbery, at 57 Broadway, New York City, on July 10th, to stockholders of record July 8th. This company has declared $50,000 in dividends to date. The returns for June were $27,000.

As to the market in Philadelphia, our correspondent writes that under the present existing conditions the gold list is the only one that represents any business in that market. In fact the gold stocks quoted have the almost exclusive preference. The others, representing large and legitimate values in the conditions of the properties, are bought to hold when bought at all. The sooner the Sherman bill is repealed the sooner we shall get down to a rock bottom legitimate basis.

Boston. July 6.

(From our Special Correspondent.)

Copper stocks the past week have ruled dull and inclined to lower prices. There is nothing in the present outlook to warrant an advance, and the tendency is to unload whenever a chance is offered. The feature of the dealings this week was the large offerings of Centennial, which depressed the price from $1 to $2¼, the lowest figures in its history. Over 5,000 shares were marketed, the greater part of them at $3. It is reported that the chances of making the property a paying venture are very doubtful, the last advices from the mine not being so favorable as was expected.

The Montana stocks have been rather quiet, with only slight changes in prices. Boston & Montana touched $17⅛, which is ⅛ below the lowest price heretofore, but it quickly rallied and sold up to $19, a gain of ⅛ over last week's closing. Butte & Boston sold at $6 early in the week, advanced to $6⅛, and to-day closed at $6¼.

Calumet & Hecla sold at $280, declined to $279, and recovered to $280, with small sales.

Tamarack advanced from $138 to $140, with later sales at $139. Quincy advanced $2½ to $107½. The mine is now in good working order, and an increased output is the cause of the advance. Osceola declined to $24¼, the lowest for the year, recovering to $25¼ in later dealings. Atlantic advanced to $7¼ and declined to $7, a small lot selling at $6. Franklin declined to $9½ and recovered to $10 for small lots. Kearsarge sold at $6¼ and $6; small sales.

3 P. M.—The market closed dull and featureless. Centennial advanced $⅛ to $2½ for 100 shares, and Tamarack declined $1 to $138.

San Francisco. June 30.

(From our Special Correspondent.)

The stringency of the money market has affected the mining stock market, but within the last day or two there was a slight reaction from the scare and prices ruled higher. The possibility of the shutting down of all the purely silver mines in the country, as well as most of the smelters, is viewed as a contingency that in the long run will tell to the benefit of California rather than its detriment. None the less, the prices ruling during the present week have been lower than at any time since 1885.

To-day Consolidated California & Virginia sold for $1.55, a slight advance on yesterday's price. Ophir sold for $1.50; Mexican for 95c; Sierra Nevada for 75c., and Union Consolidated 70c.

In the middle group of stocks the decline during the week has been more marked than in any other on the list. Best & Belcher sold for 60c.; Choliar for 45c.; Gould & Curry for 45c.; Hall & Norcross for 35c.; Potosi for 95c., and Savage for 40c.

The Yellow Jacket has been the only stock maintaining anything like a reasonable strength among the Gold Hill and South End Comstocks. It sold to-day for $1. Belcher sold for 60c.; Bullion, 30c.; Confidence, 50c; Challenge, 15c; Crown Point, 30c.; Overman, 20c., and Kentuck, 15c. The outside stocks have been entirely neglected during the week. The board adjourned from June 30th to July 5th.

SAN FRANCISCO, July 7 (*By Telegraph*).—The following are the opening quotations to-day: Best & Belcher, 65c.; Bodie, 15c.; Belle Isle, 10c.; Bulwer, 10c.; Chollar, 30c.; Consolidated California & Virginia, $1.35; Eureka Consolidated, $1; Gould & Curry, 40c.; Hale & Norcross, 25c.; Mexican, 50c.; Mono, 5c.; North Belle Isle, 10c.; Navajo, 10c.; Ophir, 95c.; Savage, 20c.; Sierra Nevada, 45c.; Union Consolidated, 35c.; Yellow Jacket, 65c.

London. June 28.

(From our Special Correspondent.)

The mining stock market has suffered severely during the last three days on the news arriving that the Indian mints had been closed to the free coinage of silver and the practical adoption of the gold standard for that country. The shares in silver producing companies have suffered a considerable relapse and hardly any buyers are to be found. The full results of the action of the Indian government are of course as yet unseen, and it is expected on every hand that the shares in such companies will go down gradually further until a point is reached when holders will cease to try to find buyers at all, and the quotations will become nominal. The most notable fall is in Elkhorns, which have fallen in two days from £1 1s. to 14s. 6d. seller. Jay Hawks have also suffered a relapse, but that these have been rather pressingly offered is also partly due to the financial difficulties of one of the large holders. DeLamar has fallen 2s. 6d.; Poorman and South Poorman 1s. each. Not a dividend-paying stock, connected with silver mining or not, has escaped the effects, while with non-dividend payers, where purchases are made on a different system, the prices have alsoo been hammered down. Of non-dividend payers the following have fallen in price: Mammoth Gold, Emma, Yankee Girl, Palmarejo, Almada and Tirito. Golden Feathers and Golden Gates have come to life for the summer and glowing reports come to hand of the prospects; there has consequently been some life in the dealings in these shares, and their values have been fluctuating considerably.

The only mining stock in which there are hopeful transactions is American Belle. These are being quietly picked up on the news that work has been resumed on the mine. The lower levels where the rich ores are found are being opened up and shipments will commence at an early date.

The failure of Mr. H. H. Warner in America has brought Seven Stars stock into a questionable position. Shares are held in fairly large quantities in this country, but no one seems to know what effect the failure of Mr. Warner will have on the interest and dividends personally guaranteed by him. At present transactions in the stock are at a standstill and quotations are quite nominal.

A sign of the depression of the times is to be seen in the case of the Harquahala Gold Mining Company, which was placed on the market a week or two ago. This company was put forward by the promoters of the Elkhorn and DeLamar companies, two of the best American mining properties ever brought over here. The shares of the Harquahala have certainly been taken up, but only after a great deal of persuasion and canvassing. Three years ago there would have been great excitement over the allotment, the shares would have been applied

for over and over again, and the price would have gone up to a high premium. To-day, with the best of sponsors, the property excites no interest at all.

The first we have heard for some time of the Sapphire & Ruby Company, of Montana, is that 79,000 carats of gems in the rough from two partial clean-ups at the mine have arrived in London. There are also cable advices of three other shipments now on their way.

The Poorman Mines, Limited, are submitting a proposition to their shareholders for the amalgamation of their company with the Poorman Consolidated Mines, Limited, which is acquiring the milling power, water rights and adjoining mines owned respectively by the Idaho Milling Company and the South Poorman Mines, Limited. This proposition will come before the meeting of the company held July 4th.

The Poorman Mines, Limited, have declared a quarterly interim dividend at the rate of 33⅓% per annum, payable June 29th, and the South Poorman Mines, Limited, one at the rate of 30% per annum, due on the same date. The Elkhorn Mining Company has declared their thirteenth dividend of 1s. 6d. per share.

A few weeks ago I mentioned that a company called the Hall Mines, Limited, had been formed here to work the Silver King and other mines in Kootenai, British Columbia. This company has now brought itself before the notice of the public by offering for public subscription some 125,000 shares of £1 each. No doubt this company is the one referred to in the editorial in the issue of June 17th. The capital is £300,000 in 50,000 7% cumulative preference shares of £1 each, and 250,000 ordinary shares of £1 each. The purchase price for the whole property is £215,000. Of this £165,000 is payable in fully paid ordinary shares of the company, £40,000 in cash and £10,000 in ordinary shares or cash at the option of the directors. The mines comprise the following claims: Silver King, Kootenai Bonanza, American Flag and Koninoor, and are situated on Toad Mountain, West Kootenai District, B. C. The mines have been worked under the partnership called the Kootenai Bonanza Mines Company, and sufficient work has been done in opening out bodies of ore that prove the value of the property. Mr. Roepell, formerly of the Tharsis Sulphur and Copper Company, has examined the property and reports that there is in sight 55,000 tons of shipping ore, carrying on an average 100 oz. of silver per ton and 17⅛% copper, valued at £20 17s. per ton. Besides this body of ore there is an undefined quantity of undeveloped ore of high grade. The weak point of the scheme, which has been freely pointed out here, is the absence of suitable transport facilities. The distance from Nelson to Kootenai Lake (six or seven miles) has to be covered by wagons traveling over a precipitous track, and Nelson itself is a considerable distance from the Canadian Pacific and Northern Pacific railroads. The price to be given for the property is also far too great.

MEETINGS.

Overman Silver Mining Company, at the office of the company, No. 414 California street, San Francisco, Cal., July 13th, at 1 p. m.

Yellow Jacket Silver Mining Company, at the office of the company, at Gold Hill, Nev., July 17th, at 3:30 p. m.

Union Consolidated Silver Mining Company, at the office of the company, No. 309 Montgomery street, San Francisco, Cal., July 17th, at 1 p. m.

DIVIDENDS.

Bald Butte Mining Company paid dividend, No. 18, of 2%, $5,000, July 3d, at the office of the company in Helena, Mont.

Victor Gold Mining Company, dividend No. 5, of five cents per share, $10,000, payable July 10th, at the office of H. R. Lounsbery, 57 Broadway, New York. Transfer books close July 8th and reopen July 11th.

METAL MARKET.

NEW YORK, Friday Evening, July 7, 1893.

Prices of Silver per ounce Troy.

July.	St. Ex.	London Pence.	N.Y. Cts.	Value of sil. in $1.	July.	St. Ex.	London Pence.	N.Y. Cts.	Value of sil. in $1.
1	4·82⅛	33¼	70	0·541	5	4·85¾	34¾	75	0·580
3	4·83	33½	72	0·557	6	4·84½	34½	73	0·565
4	.....	34¼	.....	.....	7	4·84	34⅛	71	0·549

The course of the silver market has been very erratic. After advancing on London orders to 75c., the market at that point became weak, and under prssure of sales declined to 71½c. Government purchases to-day will have tendency to steady the market. Futures to a large amount have been placed in London. This fact taken together with decreased production will make it difficult for the government to complete its quota by making counter offers below the market at an arbitrary figure.

The United States Assay Office at New York reports the total receipts of silver for the week to be 37,000 ounces.

Coinage at the United States Mints.

The following statement shows the coinage executed at the mints of the United States during the month of June, 1893:

Denomination.	Pieces.	Value.
Double eagles	73,018	$1,460,360.00
Eagles	302,490	3,024,900.00
Half-eagles	17	85 00
Quarter-eagles	23	57.50
Total gold	375,548	$4,485,402.50
Standard dollars	145	$145.00
Half-dollars	793,145	396,572.50
Quarter-dollars	853,879	213,469 75
" " Columbian	40,023	10,005.75
Dimes	190,145	19,014.50
Total silver	1,877,337	$639,207.50
Five cents	700,245	$35,012.25
One cent	3,820 245	38,202.45
Total minor	4,520,490	$73,214.70
Total coinage	6,773,375	$5,197,824.70

Gold and Silver Exports and Imports at New York, Week Ending July 1st, 1893, and for Years from January 1st, 1893, 1892.

	Gold.		Silver.		Excess of
	Exports.	Imports.	Exports.	Imports.	Exports.
Week....	$	$602,620	$731,015	$39,760	$88,635
1893.....	68,872,845	6,558,774	15,854,225	1,294,538	76,873,958
1892.....	43,408.993	6,279.115	11.695,481	828,577	47,996,782

NOTES OF THE WEEK.

The monthly circular of the Treasury Department shows a net decrease in circulation for June of $2,425,490. The figures in detail are as follows: Loss: Gold coin, $4,312,244; gold certificates, $8,499,950; currency certificates, $5,020,000; standard silver dollars, $1,023,746; subsidiary silver, $763,334. Gain: Treasury notes, $8,156,511; silver certificates, $4,373,573; National bank notes, $2,810,340; United States notes, $1,853,360. The total circulation on July 1st, the beginning of the new fiscal year, was $1,593,526,411, a *per capita* circulation of $23.86. The total amount in circulation is $9,346,927 less than on July 1st, 1892. The following table shows the changes in circulation during the past fiscal year:

	July 1, 1893.	July 1, 1892.
Gold coin	$403,633,700	$408,767,740
Standard silver dollars	57,029,743	56,799,484
Subsidiary silver	65,400,268	62,386,518
Gold certificates	92,970 019	141.235.339
Silver certificates	326,489,145	326.880,803
Silver Treasury notes, Act 1890.	140 661,694	98,051,657
United States notes	320,875,683	311,814,840
Currency certificates	11,935,000	29,830,000
National bank notes	174,731,139	167.306,957
Totals	$1.593,526.411	$1,603,073,338

The most important items here shown are the decrease in gold certificates of about $48,000,000, in currency certificates about $18,000,000, and an increase in Treasury notes of about $43,000,000. During the month of June there was a net decrease of $9,963,512 in the Treasury money and bullion fund; gold coin holdings decreased $5,536,819; gold bullion, $2,526,358; silver Treasury notes, $4,156,158; United States notes, $1,853,360, and National bank notes, $1,260,722, while the Treasury holdings of silver bullion increased $3,884,630; standard silver dollars, $1,023,891, and subsidiary silver, $461,334. The Treasury store of gold bullion on July 1 aggregated $78,345,510, and of silver bullion, $118,173,820.

The general stock of money coined or issued and in the Treasury on July 1st, the beginning of the current fiscal year, is shown by the following table:

	Coined or issued.	In Treasury.
Gold coin	$513,743,623	$110,109,923
Standard silver dollars	419,332.450	362.302,707
Subsidiary silver	77,256,212	11,855,944
Gold certificates	94.041,189	1,071,170
Silver certificates	330,957 504	4,468,339
Silver Treasury notes	147,190,227	6,528,533
United States notes	346,681,016	25,805,333
Currency certificates	12,365,000	430,000
National bank notes	178,713.872	3,982,733
Totals	$2,120,281,093	$526,554,682

Some statistics recently published by "Bradstreets" show that the number of failures have never been so great as in the first half of the present calendar year, when they numbered 6,239 against 6,037 in the first half of 1891 and 6,106 in 1885. The aggregate liabilities of these failures amounted respectively to $39,424,144 in the first three months of the year and $131,436,078 during the second quarter, a total for the half year of $170,860,222. The half year which came nearest to this was that of 1884, when the amount was $114,104,357.

The condition of the silver market and the action of the Indian Government have naturally been the most important topics of the week. We have already pointed out that the attempt to maintain the rupee at 16d. would prove futile. As yet the action of India is but imperfectly understood, but the opinion is growing that the demand for silver will show no great diminution. India has a merchandise trade balance in her favor of from $40,000,000 to $50,000,000, and heretofore this amount has been paid in silver bullion, which has been coined by the Government as received. The English Government has arbitrarily established a rupee exchange at 16d., thus attempting to do that which the English papers have berated the United States for trying to accomplish, namely, to maintain a fixed ratio between gold and silver against a constantly falling price for silver bullion. The rate was put at 16d. because that was the average price during the past year, and it is evident that the government assumed that silver bullion would not fall to any great extent below this. As a matter of fact, the bullion value of the rupee is now about 13d., and it does not seem possible that the Indian Council can continue to sell its bills at the established rates.

Even in England opinion as regards the effect of India's action is by no means unanimous. Our contemporary, the London *Financial News*, commenting editorially upon the situation in its issue of June 28th, says: We have sounded Indian bankers, silver brokers and dealers in rupee paper, but all were in a condition of complete mystification. . . . No one knows exactly what effect the action of the Indian Government may ultimately have. The mints are closed, and the rupee has, for the time being, an exclusive value of 16d.; but what value it may have in the more or less immediate future, no one can tell. . . . What is to be gained by the fixing of the exchange value of the rupee everybody knows. The Indian treasury is relieved of part of the annual loss from exchange, the ever-growing leakage in the Budget is prevented from going further, and Anglo-Indians having home remittances to make know exactly where they stand. All this is assuming that economic laws accommodate themselves to the new conditions. Unhappily, such laws are refractory, not to say stubborn.

The same paper further expresses the belief that the Indian mints will not be buyers of silver for more than a year, basing this opinion upon the fact that the Indian Government has a reserve of some £8,000,000 in silver, and that this will be sufficient for circulation purposes for a year or more.

Dispatches from Rome dated July 5 state that negotiations are being conducted by the Governments of Italy, France, Belgium and Switzerland, looking to the protection of the interests of the nations composing the Latin Union. It is believed that none of the members of the union will withdraw. In Berne, Switzerland, the minting of one-half, one and two-franc pieces has been almost suspended.

In Madrid on July 5 the Minister of Finance, Senor Gamazo, in reply to Senor Toca, a member of the International Monetary Conference, said that Spain did not need to adopt special measures to meet the silver crisis. He further said that he believed that the present depression in silver would soon be remedied.

Clearing House certificates are already being retired, which fact is indicative of returning confidence. The total amount issued was $22,165,000. On Thursday, July 6th, $100,000 of these were retired. As yet the expected currency movement from the West to the East bas not set in, but on the other hand no money is leaving New York. The release of large sums by various incorporated companies will add to the deposits of the national banks, enabling them to increase their loans and ease up the money market. The confidence thereby brought about will in turn cause the release of about $20,000,000 hitherto tied up by the savings banks.

The following table shows the amount of bullion in the principal European banks on the date given:

	June 29, 1893.		June 30, 1892.	
Bank of—	Gold. £.	Silver. £.	Gold. £.	Silver. £.
England	30,119,008	.....	27,818,617	.....
France	68,628,613	51,237,015	63,463.618	51,897,000
Germany	32,649,000	10,883,000	36.722,250	12,240,750
Aust.-Hung'y	10,412,000	17.476,000	5,918,000	16.576,000
Netherlands	2,819,000	7,134,000	3,243.000	7,136,000
Nat. Belgium	2,798,000	1,399,000	2,900,000	1,450,000
Spain	7,916,000	6,593,000	7,596,000	5,125·000

The New York Chamber of Commerce met on Thursday, July 6th, and by a vote which was practically unanimous passed a resolution demanding the repeal of the Sherman Silver Purchase Act. The preamble and resolutions adopted were as follows:

Whereas, This country has often suffered greatly by reason of hasty and ill-advised financial legislation; and

Whereas, It is now suffering from the effect of the silver-purchasing clause of the Sherman act, which, by creating distrust as to the interchangeability of our currency based on silver with our currency based on gold, has caused widespread alarm and has almost created a commercial panic; and

Whereas, In consequence of this alarm, money is withdrawn from circulation, business is greatly depressed, many mills and manufactories are closing or preparing to close, and thousands of laboring men are about to be thrown out of employment; and

Whereas, business enterprises will not be resumed nor labor be steadily employed until money can be obtained by manufacturers and by merchants at moderate rates; and

Whereas, Ordinary interest rates cannot be expected until confidence in the stability of all the money of the country shall be thoroughly re-established, so that the lender may not fear repayment in dollars less valuable than those he lends; now be it

Resolved, That the repeal of the silver-purchasing clause of the Sherman act, which month by month

renders increasingly difficult the maintenance of the parity of each dollar with every other dollar, is essential to the prompt restoration of national prosperity. This chamber therefore urges the speedy and unconditional repeal of such silver-purchasing clause.

Resolved, That in the judgment of this chamber a representative commission should be appointed by Congress at the special session about to convene, which commission should diligently study the whole body of coinage and currency laws of the United States and of other countries, and report at the regular session of Congress, to the end that a comprehensive plan for a safe and elastic currency may be care fully matured in the light of the world's experience.

Resolved, That a committee of seven members be appointed by the chair to co-operate with other commercial bodies representing similar interests as this chamber in Washington, with power to use all legitimate means for the prompt repeal of the Sher man law.

Domestic and Foreign Coins.

The following are the latest market quotations for the leading foreign coins:

	Bid.	Asked.
Mexican dollars	$.581/2	$.61
Peruvian soles and Chilian pesos	.52	.55
Victoria sovereigns	4.85	4.88
Twenty francs	3.86	3.89
Twenty marks	4.74	4.78
Spanish 25 pesetas	4.75	4.80

Imports and exports of metals and ores into and from the United States during May, 1893 and 1892:

IMPORTS.

	1893.	1892.
Iron ore, tons	61,834	61,837
Pig iron, tons	5,243	4,341
Scrap iron and steel, tons	534	1,309
Bar iron, lbs	4'4,834	837,272
Steel bars, blooms, billets etc., lbs.	8,649,299	2,435,207
Wire rods, iron or steel, lbs	7,090,202	11,889,843
Sheet and taggers, iron and steel, lbs.	7,526,212	2,563,018
Tin pla es, terne plates, lbs	81,427,015	48,804,395
" in pigs etc., lbs	9,922,298	5,106,307

EXPORTS.

	1893.	1892.
Copper ore and matte, tons	210	6,675
" ingots and old bars, lbs	5,485,060	1,319,423
Pig iron, to s	4,062	1.048
Bar " lbs	126,685	211,898
Ingots, bars and rods steel, lbs	111.016	26,700
Iron nails and spikes, lbs	1,141,992	1,087,240
Wire, lbs	4,525,236	2,302,281
Zinc ore, tons		96
" pigs, bars, etc., lbs	503,941	1,869,607

EXPORTS OF FOREIGN METALS FROM UNITED STATES, MAY, 1893.

Copper ore, lbs	148,839
" pigs, bars, ingots or old, lbs	4,011
Pig iron, tons	none
Scrap iron or steel, tons	"
Bar iron, lbs	547
Sheet iron, lbs	17,120
Tin plates, lbs	257,710
Wire iron or steel, lbs	none
Tin in pigs, etc., lbs	34,720
Lead—quantity not given	$559,855

During the five days ending July 7th, the exports and imports so far as ascertained have been as follows: Exports, gold, $2,800; silver, $962,410. Imports, gold, $1,046,523; silver, $9,517. Of the gold imported, not less than $1,016,186 came from Havana, and it is doubtful whether this be a *bona-fide* import. The balance of trade is in favor of Havana, and it would seem probable that this gold was brought here for trans-shipment.

It is said that the Bank of Montreal has ordered £100,000 in London, but no details are obtainable.

Wall street is looking up a bit and money is slightly easier, thanks to the action of the New York banks in taking out large amounts of certificates and lending out at lower rates the money thus released from their reserves. However, for commercial purposes it is very difficult indeed to get in money, even against first-class collaterals and, as a consequence, consumers show but little anxiety to take in supplies at present very low prices, while dealers are quite anxious to sell, the result being that prices of all commodities have declined.

Copper has been quite nominal; little is offering, but that little at considerably lower prices; the Calumet and Quincy companies hold for 11c., and evince no disposition to meet the market, but others offer at 10½, and even below, without much attention being attracted. For electrolytic we have to quote 10¼ with very little doing, while casting is firm and unobtainable at less than 10c., Arizona pig is firmly held at 9 30@9·35, but no business reported.

For the past eight weeks exports both of fine copper and copper matte have been very heavy and are likely to continue to be so for some time to come, as Europe is a regular and free buyer of all sorts.

London has been stagnant, at the recently reported decline. We quote G. M. B.'s at £43 5s.@£42 7s. 6d. for spot, and 10s. higher for three months prompt, and refined and manufactured sorts as follows: English Tough, £47@£47 10s.; Best Selected, £48 5s.@£48 15s.; Strong Sheets, £55@£55 10s.; India Sheets, £52 5s.@£52 12s.; Yellow Metal, 4¾d.

It seems that there was absolutely no foundation for the rumors recently current, that a new French syndicate had been formed for the purpose of advancing the prices for copper, the statistics for which are cabled as having shown an increase during the last half of June of about 500 tons.

The exports of copper from the port of New York during the past week were as follows:

To Liverpool—	Copper matte.	Lbs.	
S. S. Runic	293 casks	365,325	$15,500
" "	4,424 bags	486,244	21,500
" Italia	2,786 bags	341,448	23,270
To Liverpool—	Copper.	Lbs.	
S. S. Runic	20 casks	23,000	$2,800
" "	1,162 pigs	283,309	28,200
" Teutonic	415 pigs	104,920	12,000
To Hamburg—	Copper.	Lbs.	
S. S. Steenhalt	90 casks	94,800	$10,130
To Hull—	Copper.	Lbs.	
S. S. Lydian Monarch	80 bbls.	100,000	$11,230
To Bordeaux—	Copper.	Lbs.	
S. S. Panama	171 casks	212,800	$23,400
" "	2,502 bars	151,724	16,314
To Rotterdam—	Copper.	Lbs.	
S. S. Werkendam	180 casks	224,950	$24,700
" "	1,450 plates	161,127	16,900
" "	1,097 pigs	329,097	32,800
To Stettin—	Copper.	Lbs.	
S. S. Italia	516 plates	67,240	$6,700

Tin.—The efforts of importers to get as much block tin into the country as possible before the duty of 4c. a pound took effect on July 1st increased the value of the importation for 11 months of the fiscal year, 1893, by 40%. The imports for May, 1893, were 9,922,298 lbs., valued at $2,033,463, against 5,106,307 lbs. in 1892, worth $1,023,889. For the 11 months ending May 31st, 1893, the imports were 51,755,679 lbs., worth $10,499,177, against 38,089,085 lbs., valued at $7,493,802, in 1892. It is expected that the June imports will increase the total for the year to 60,000,000 lbs.; the total for the fiscal year 1892 was 43,908,653 lbs., valued at $8,667,870.

Tin has declined quite heavily in price, thus showing the adverse influence of the financial conditions. Not much of the metal has been offered for sale, most of it being held by strong people, but the little that has been put upon the market has caused a decline in price to 18¾, or about the lowest point touched at any time for spot, while August is salable at from 19¼ to 19⅜. Considering the fact that no further imports of tin can be made without a duty of 4c. per pound being paid, to-day's importation cost price would be 22½@22¾, so that as deliveries for consumption have been very good it would not be surprising to see an early and marked improvement here.

In London prices have fluctuated, according to the quotations for silver, and at the close £83 10s. is quoted for spot, and £82 10s. for three months' prompt.

From the East we hear that shipments during this and next month will be comparatively light, but that afterward an increase may be looked for.

Lead.—In this metal there has been a strong upward movement in connection with the reports that all the Colorado mines have closed, that some of those in Idaho and Utah have done likewise, and that still others will soon follow suit. There can now be no doubt that, as a result of this movement, production will surely decrease and, prices already being exceptionally low—although not quite as low as a short while since—and less than the cost of production, values will materially improve. We quote: 3¾@3·85 New York.

London prices have also advanced, there being no sellers at all, and for Spanish we have now to quote £10 and for English £10 5s., with an even greater improvement likely.

St. Louis Lead Market.—The John Wahl Commission Company telegraph us as follows: Lead rather unsettled and difficult to give accurate quotations. The nominal value is about 3·40c. The demand for spot lead very light; August and September lead in urgent request, but sellers refuse placing the metal at current rates for these deliveries.

Spelter has been rather weak in spite of the fact that the strike interferes with production and but few shipments have been made out. This is because of the bad condition of the galvanizing business and consequent lack of demand. We quote $4.15@$4.20 New York, while in London the quotations are £17 16s. 3d. for good ordinaries and £18 for specials.

Quicksilver.—This market continues very quiet. There is no change to report in prices and we quote this week: New York, $40; London, £6 17s. 6d.

Antimony is rather dull, with Cookson's to be had at 10½, L.X. at 10¼, and Hallet's at 9⅞.

Nickel.—We have heard of no transactions.

IRON MARKET REVIEW.

NEW YORK, Friday Evening, July 7, 1893.

Pig Iron Production.

Fuel used.	Week ending July 7, 1892.	Week ending July 7, 1893.	From Jan., '92.	From Jan., '93.
Anthracite.	77 / 33,738	71 / 33,699	930,039	872,662
Coke.	143 / 128,169	139 / 133,625	3,547,892	3,510,780
Charcoal	46 / 11,375	34 / 8,394	264,434	244,612
Totals	266 / 173,282	244 / 175,718	4,742,365	4,608,054

Pig Iron.—The conditions which prevail in the pig iron market to-day are identical to those which we have been reporting for the past few weeks. The lack of features is the same. The trade is very dull; the demand is small, and the hand-to-mouth policy of buyers has become more pronounced than ever. There is no doubt that stocks are accumulating, the curtailment which many anticipated, and which would have proved beneficial to the trade at large, not having been made; at least, it does not appear that the production has decreased to that degree which would affect the market. The continued financial uncertainty naturally tends to prolong the period of dullness, and the prospects for the near future are not especially bright. The anticipated labor troubles have not proved serious and a settlement has been, or will be, reached which precludes the idea of a prolonged shutdown of the mills. Reference to our mining news columns will show that the ore-producers of the Lake Superior region are suffering acutely from the effects of the depression in the iron markets of the entire country.

In this market we hear of no pig iron sales of importance. It is again reported that Southern iron is offering at very low figures, equivalent to $12.25 for No. 2 F. It is impossible to learn whether actual sales have taken place at prices below those quoted by us. Oftentimes furnaces in need of funds will make sales directly to consumers at terms which are not made public, and of which even the best posted men in the trade seldom hear. Our quotations this week are: Northern brands: No. 1, $14.50@$15.25; No. 2, $13.75@$14.50; Gray Forge, $12.50@$13.00; Southern: No. 1, $14 @$15; No. 2 F., $13@$13.50; No. 1 soft F., $13.25 @$14; Gray Forge, $12@$12.50; tidewater. Scotch irons: Coltness, $21.50@$22; Eglinton, $19.50@$20; Summerlee, $20.

Billets and Rods.—There is no business doing in this market. We quote: Steel billets, tidewater, $23.50@$24.50; foreign, $28.50@$29; wire rods, $31.50 @$32; foreign, $40@$40.50; Swedish, $52@$53.

Manufactured Iron and Steel.—Very little business is doing in manufactured iron and steel. Prices continue low. We quote: Angles, 1·75@2c.; axles, scrap, 1·90@2·10c., delivered; steel, 1·85@2c.; bars, common, 1·50@1·60c.; refined, 1·65@1·9c. on dock; beams, up to 15 in., 1·80@2c.; 20 in., 2·10@2·30c.; car truck channels, 2@2·10c.; channels, 1·90@2·10c. on dock; hoops steel, 1·8@1·9c., delivered; links and pins, 1·85@2·10c.; plates, bridge, 2@2·10c.; firebox, 2·5@2·8c.; flange, 2·10@2·25c.; marine, 2·50@2·75c.; sheared, 1·85 @2·10c.; shell, 1·95@2·10c.; tank, 1·8@2c.; universal mill, 1·80@1·90c.; tees, 1·95@2·15c., all on dock.

Merchant Steel.—The market continues dull. Prices are unchanged, being as low as they probably will be. Manufacturers that lower prices mean greater losses. Quotations are: Tool steel, $6.50@ $6.75 and upward; tire steel, $2@$2.10; toe calk, $2.20@$2.30. Bessemer machinery, $2.10@$2.20. Bessemer bars, $1.80@$2; open hearth machinery, $2.20; open hearth carriage spring, $2.10@$2.20: crucible spring, $3.75@$4.

Old Material.—We do not hear of any business doing in old material. Quotations, in the absence of sales on which to base them, are nominally as follows: Old iron rails, $15.50@$16; steel rails, $11.50 @$13; car wheels, $12@$14.

Rail Fastenings.—The market for rail fastenings continues lifeless. Quotations remain: Fish and angle plates, 1·55@1·60c. at mill; spikes, 1·9@1·95c.; bolts and square nuts, 2·45@2·50c.; hexagonal nuts, 2·55@2·60c., delivered.

Spiegeleisen and Ferromanganese.—No business has been done in either spiegel or ferro during the past week. Quotations are nominally as follows: 10 to 12% Spiegel $22@$22.50, 20% $25@ $25.50. Ferro, $57@$57.50.

Steel Rails.—We do not hear of any sales of standard sections for the week. The market continues very dull. Quotations are unchanged at $29 mill or tidewater. Girder rails, $31@$33. Steel rails fit to relay can be had for $20.

Tubes and Pipe.—Business in tubes and pipes is rather quiet just now. Ruling discounts on carload lots are as follows: Butt, black, 57½, 10 and 5%; butt, galvanized, 50, 10 and 5%; lap, black, 67½, 10 and 5%; lap, galvanized, 57½, 10 and 5%.

Chicago. July 6.

(From our Special Correspondent.)

The most important event of the week, and which has undoubtedly been the cause of infusing some greater degree of confidence into commercial circles, is the action of the President in calling a special session of Congress. As to what effect, if any, it will have upon the iron trade remains to be seen. The week, broken by the national holiday, has been a quiet one generally speaking as regards both pig iron and finished material. There has possibly been some little gain in strength in local coke foundry iron, by reason of the large sales of the previous week, amounting in round numbers to nearly half a million dollars. The amount placed under contract was rather more than 30,000 tons, and there are others yet to hear from. Several heavy contracts for iron and steel bars were closed the latter part of the week at prices which are satisfactory to sellers. As usual, the general shut-down of mills has brought a number of small inquiries into the market for finished material, and altogether there is a fair volume of business in sight for annual contracts, which will probably be placed during July.

Pig Iron.—As compared with the preceding week the amount of business closed up has been very light. Several contracts ranging from 400 to 600 tons have been placed for local coke foundry iron, and there is now a fair amount of inquiry.

Southern coke iron is weaker than ever and some furnaces have withdrawn from the market on that account. Several inquiries noted in a previous report have been withdrawn as the parties have decided to close their shops for a month or six weeks. Concessions are freely accorded.

Quotations per gross ton f. o. b. Chicago are: Lake Superior charcoal, $16.00@$16.50; Lake Superior

coke, No. 1, $13.75@$14.00; No. 2, $13.25@$13.50; No. 3, $12.25@$12.50; Lake Superior Bessemer, $14.00; Lake Superior Scotch, $14.50@$15; American Scotch, $16.00@$16.50; Southern coke, foundry, No. 1, $14.00; No. 2, $12.35; No. 3, $12.00; Southern coke soft, No. 1, $12.75; No. 2, $12.50; Ohio silveries, No. 1, $16.50; No. 2, $16.00; Ohio strong softeners, No. 1, $16.75; No. 2, $16.25; Tennessee charcoal, No. 1, $17; No. 2, $16.50; Southern standard car wheel, $18.50@$19.

Structural Iron and Steel.—Prices on beams and other shapes are firmer and, while business is still rather light, there is every reason to believe the market will gain in strength each week during the shut-down. Quotations, car lots, f. o. b. Chicago, are as follows: Angles, $1.75@$1.85; tees, $1.95 @$2.05; universal plates, $1.75@$1.85; sheared plates, $.75@$1.85; beams and channels, $1.80@$1.90.

Plates.—Retrenchment appears to be the order of the day, and some heavy business, which has been pending, will not be closed until finances improve. Orders are light. Steel sheets, 10 to 14, $2.25@$2.35; iron sheets, 10 to 14, $2.20@$2.30; tank steel, $1.90 @$2; shell iron or steel, $2.50@$2.75; firebox steel, $4.25@$5 25; flange steel, $2.74@$3; boiler rivets, $4 @$4.15; boiler tubes, all sizes, 65%.

Merchant Steel.—An increased demand for soft steel needed for immediate shipment is already noted on account of the shut-down of so many plants. The tonnage handled last week from the implement was large and inquiry continues good. Quotations are: Tool steel, $6.50@$6.75 and upward; tire steel, $2@$2.10; toe calk, $2.30@$2.40; Bessemer machinery, $2.10@$2.20; Bessemer bars, $1.60@$1.70; open hearth machinery, $2.25@$2.30; open hearth carriage spring, $2.10@$2 20; crucible spring, $3.75 @$4.

Galvanized Sheet Iron.—The week preceding July 1st witnessed a more active demand from mill than from warehouse. Discounts are unchanged at 70, 10 and 5% off on Juniata and 70, 10 and 10% off on charcoal, and jobbing quantities at 70 and 7½% off on the former and 70 and 10% off on the latter.

Black Sheet Iron.—Demand is very slow, and in the event of a protracted shut-down of mills there will be a scarcity, as stocks are known to be light. Quotations are unchanged at 2·80c. for No. 27 common, Chicago. Jobbers quote 3c. for iron and 3·10 @3·15c., for steel, same gauge.

Bar Iron.—A mill in this vicinity booked a 1,200-ton annual contract at close to 1·50c. base and half extras; other large implement orders are being figured on, and for this class of business the demand has been fairly active. Agents of Eastern mills are not seeking orders and are quoting only on such sizes as they have in stock. The Madison Car Works have taken some large contracts and will resume shortly. Store trade is quiet at 1·65@ 1·75c. on iron and steel bars, and trade quiet.

Nails.—A better inquiry has developed for wire nails the past few days, and mill shipments are steady at $1.45 Chicago and $1.55 from store. Steel cut nails are in light demand from mill in small lots at $1.20, and $1.30 from jobbers in less than car loads.

Steel Rails.—Demand from railroads continues light. We hear of no larger contracts than 1,000 to 2,000 tons, and inquiry appears to be limited to light weight and street car girder sections. Quotations on standard weights are $30@$31.

Scrap.—Outside of a few orders for "cast," for foundries, there is nothing doing worthy of mention and quotations are nominal. Railroad, $13.50; No. 1 forge, $12; No. 1 mill, $9.00; fish plates, $14.50; cast borings, $5.00; wrought turnings, $7.50; axle turnings, $9.50; machinery castings, $10; stove plates, $1.50; mixed steel, $9; coil steel, $15; leaf steel, $15; tires, $14.50.

Old Material.—It was expected that the heavy sales of iron rails the previous week would have stirred up local railroads, but we hear of no offerings and no sales. A nominal quotation would be $16@$16.50. Old steel rails are very dull at $12.25 @$13.50 as to condition, length, etc. Car wheels unchanged at $14.50.

Louisville. July 5.

(Special Report of Hall Bros. & Co.)

There is really no market of consequence to write about, and no sales of any size; orders run almost entirely in small lots, carloads. There have been complaints that even in cases of cash sales to perfectly solvent parties cash could not be obtained in settlement; notes have often to be taken, and sometimes renewed. Some producers have expressed a determination to shut down at an early date and remain out of blast until things generally get in a better condition.

Hot Blast Foundry Irons.—Southern coke No. 1, $13@$13.25; Southern coke No. 2, $12@$12.25; Southern coke No. 3, $11.25@$11.50; Southern charcoal No. 1, $15.50@$16; Southern charcoal No. 2, $15@$15.50.

Forge Irons.—Neutral coke, $10.75@$11; mottled, $10.50@$10.75.

Car Wheel and Malleable Irons.—Southern (standard brands), $17.50@$18.50; Southern (other brands), $16.50@$17; Lake Superior, $18@$18.50.

Philadelphia. July 6.

(From our Special Correspondent.)

Pig Iron.—The developments in Western Pennsylvania have assured us that there will be no serious trouble, and it is as well that we made no calculations based upon a suspension of production in the West. Business in crude iron has been practically suspended, and it is doubtful whether there will be any business to report for perhaps two weeks to come, apart from the usual unimportant sales of foundry iron, which nothing interferes with. The founders in this end of the State, and in the country supplied from this point, are all doing a good business, or have an assurance of steady work for the summer; but any effort to sell them iron beyond their immediate needs is sure to fail. To-day's quotations are given at $15.25 for a very good No. 1, actual sales. No sales of No. 2 have been reported to-day, but there have been standing offers in the market for some two or three weeks, which makers can have when they are ready. As all the mills are idle, there is no forge iron selling. The muck iron mills are also out for repairs, but there is a prospect for quite an increase in business later in the month.

Steel Billets.—Some makers of billets were surprised this week to receive offers for large quantities of billets, but the offers were such as no one could accept. There is, in fact, no business to do. The consumers of billets are mostly idle, and all of them have some stock on hand, and as manufacturers feel that they are about giving billets away at present selling prices, there is not much probability of making sales.

Finished Iron.—There is nothing whatever to report this week in the finishing departments; all mills are idle. The suspension in some cases will continue to the end of the month, according to present intentions. The manufacturers are not disposed to say much about the future. The market is unsettled. Settled financial conditions would open the way for a great deal of new business. The production of bar iron for the past month or two has been slightly in excess of requirements. The summer suspension will serve to clean up stocks. Several manufacturing concerns have decided to be in no hurry about resuming. The nail factories are idle as well, and at present selling prices there is no disposition to hurry production. The sheet mills will start up, perhaps, sooner than the bar mills, and even if orders are not pressing, the managers will feel no hesitancy in accumulating a little stock for the fall trade. The plate mills are in pretty good shape, although just now the orders on hand will take but little time to complete. Those who are best qualified to speak for the plate mills say that the enterprises under consideration will take as much iron as the mills can comfortably turn out. The uncertainty is as to whether all of these enterprises will be undertaken. Trolley road requirements are quite an item. Machine shop supplies are in good demand. Car building material of all kinds will also help to keep a strong market. The demand for structural material will in all probability keep the mills going throughout the year. If some of the enterprising capitalists of this city had their way, two elevated railroads would be under construction by this time, and some of the biggest contracts ever placed would be in the hands of manufacturers. The steel rail makers all say that there are more small orders for rails coming in now than usual, and that the prospects for big orders are rather remote at present. The handlers of old material say a great deal of stock is being offered, and that the tendency of prices for old rails and all kinds of scrap is downward, though there is no actual decline in quotations.

Pittsburg. July 6.

(From our Special Correspondent.)

Raw Iron and Steel.—A decreasing demand for iron during the past few weeks has been met by a decreasing production, so that prices have not materially changed. The present level of quotations seems to be about the cost of production for the establishments now in operation, and the tendency is to suspend work rather than reduce prices. The purchases of both crude and finished products have fallen off largely since the middle of June, and buyers are willing to contract for only such material as is required for immediate use. The feature of the situation in the Western section is the closing down of many of the iron ore mines in the Lake Superior region.

The iron scale is still unsettled; the reports in regard to a settlement are very unsatisfactory. The official report has not been made public, as there are several parts of the scale that have not been satisfactorily arranged. There have been concessions made on both sides and it now looks as if a satisfactory arrangement was not far off. The mills not running are undergoing repairs in order to be ready for business when the time arrives to resume operations. The first half of 1893 has closed on a very unsatisfactory condition of affairs in the iron and steel trade. The volume of business shows up fairly well, yet it may well be doubted if even the best equipped concerns have done more than earn interest on capital, while those less favorably situated must have run considerably behind. The worst feature, however, has been the difficulty of making collections, and in some instances losses through failures or the locking up of funds through receiverships.

Steel Billets and Slabs.—Market dull, with no disposition to buy heavily, although prices are certainly very tempting at present. The chances are that very little steel will be made during the current month, in which event consumers will probably find more or less of a scarcity and with that higher prices. However, an early resumption would work the other way, so that buyers think it may be worth taking chances a little while longer.

Structural Material.—The mills generally have had a pretty good run of business for some time past, but competition has been so sharp that there was no margin for profit. Every article on the list can be had at the lowest on record, and in some instances lower than ever before recorded.

Coke Smelted Lake and Native Ore.	
Tons.	Cash.
1,000 Bessemer, July, December	$13.50
1,000 Bessemer, July.	13.30
700 Bessemer, July, August	13.35
500 Bessemer, July.	13.35
200 B., July	13.40
1,000 Gray Forge	12.00
500 Gray Forge	12.10
500 Gray Forge	12.00
350 Gray Forge	12.25
300 Gray Forge	12.20
200 No. 1 Foundry	14.00
200 No. 2 Foundry	13.00
100 Gray Forge	12.25
100 Gray Forge.	12.20
100 No. 1 S	15.75
100 No. 2 S	14.75
60 No. 2 F	13.00
Charcoal.	
75 No. 2 F	18.75
75 No. 2 F	18.65
75 C. B.	24.00
75 W. B.	19.40
50 C. B.	26.00

Muck Bar.	
300 N.	23.00
250 N.	22.75
250 N.	23.00
200 N.	22.85
Billets and Slabs.	
1,000 B., July to Dec. at mill	21.75
500 B, July, at mill.	21.65
500 B., July, at mill.	21.50
200 B., July, at mill.	21.50
Billets and Bar Ends.	
1,000 B. & B. July and August	$14.75
Sheet Bars.	
200 S. B., at mill	28.00
Ferro-Manganese.	
100 80% Domestic	58.50
75 80% Domestic	58.50
Scrap Material.	
200 steel scrap, gross	13.00
100 forgings, net	10.25
50 car springs, gross	17.50

COAL TRADE REVIEW.

NEW YORK, Friday Evening, July 7.

Statement of shipments of anthracite coal (approximated) for week ending July 1st, 1893, compared with the corresponding period last year:

	July 1, 1893. Tons.	July 2. 1892. Tons.	Difference.
Wyoming region	550,285	573,580	Dec. 23,295
Lehigh region	152,892	143,064	Inc. 9,828
Schuylkill region	278,112	324,924	Dec. 33,812
Totals	981,289	1,028,568	Dec. 47,279
Total for year to date	21,128,868	19,659,508	Inc. 1,469,360

PRODUCTION OF BITUMINOUS COAL for week ending July 1st and year from January 1st:

Shipped East and North:	1893. Week.	1893. Year.	1892. Year.
Phila. & Erie R. R.	1,596	46,905	41,559
Cumberland, Md.	78,909	2,009,323	1,084,298
Barclay, Pa.	936	31,155	102,075
Broad Top, Pa.	9,721	355,593	288,191
Clearfield, Pa.	69,136	2,141,213	1,930,935
Allegheny, Pa.	19,102	656,698	620,047
Beach Creek, Pa.	26,327	816,822	1,271,653
Pocahontas Flat Top	52,341	1,465,987	1,152,177
Kanawha, W. Va.	70,738	1,583,520	1,231,482
Total	329,106	9,107,216	8,448,717

Shipped West:	1893. Week.	1893. Year.	1892. Year.
Pittsburg, Pa.	24,635	660,190	656,888
Westmoreland, Pa.	34,768	1,031,938	819,986
Monongahela, Pa	25,775	392,575	289,830
Totals	85,178	2,085,003	1,766,704
Grand totals	414,284	11,192,219	10,215,421

PRODUCTION OF COKE on line of Pennsylvania R. R. for the week ending July 1st, 1893, and year from January 1st, in tons of 2,000 lbs.: Week, 85,430 tons; year 2,722,198 tons; to corresponding date in 1892, 2,907,105 tons.

Anthracite.

If the anthracite coal market has been marked by unmitigated dullness one does not have to go far to seek a reason. A half holiday, followed by three whole holidays, is largely responsible for the present condition of affairs. The situation is further complicated by the advance in prices, noted in our issue of July 1st, and by the continued stringency of the money market. Holidays need no explanation; it is plain that while they are in force orders are neither given nor received. In regard to the advance in prices there seems to be a wide difference of opinion. Some operators say that the advance was necessary and was even demanded by retail dealers. Others do not hesitate to characterize it as absolutely unwarranted and prejudicial to the entire trade. One and all unite in saying, however, that few, if any, sales are making at the July circular rates. Tidewater shipments are being made, and will continue to be made in all probability to July 20th on the basis of June rates. Meanwhile the line traffic, such as it is, is being done at the new rates. It can readily be seen that the chief benefit here inures to the retailer who marks up his rates immediately, and makes a double profit on stocks on hand. The consumers suffer, but the interest of the consumers is not a matter of concern to either operators or dealers. Those who are the best informed look for no improvement at present, for although the output for the month has been restricted to 3,000,000 tons it is pointed out that the production for the half year has been 20,951,870 tons against 19,403,235 tons in 1892 and 17,965,090 in 1891; an increase the continuance of which is unwarranted in face of the existing commercial depression.

We hear that some of the collieries are now working full time. Each company can take out its allotment in three or four weeks, as it sees fit. The continued stringency of the money market acts on the

coal trade indirectly. It is said that the coal companies, with the exception of Reading, are not borrowers, but rather lenders of money, but it is to be observed that the weak position of the Reading has given rise to the rumor that its coal was to be thrown upon the market at auction. This rumor was telegraphed to every part of the country and buyers held off expecting a break in prices. Again the stringency has directly affected industrial enterprises and orders have consequently fallen off.

Actual prices are 15@25c. below the official circular rates, which are as follows f. o. b. at tidewater shipping points:

	Broken.	Egg.	Stove.	Chestnut.
Hard white ash	$4.00	$4.25	$4.60	$4.60
Free white ash	3.90	4.15	4.60	4.60
Shamokin	...	4.50	4.80	4.60
Schuylkill R. A.	....	4.50	4.95	4.75
Lykens Valley	5.00	4 80	6.20	4.45

Pea, $2.50@$2.75; No. 1 buckwheat, $1.75@$2.00; No. 2 buckwheat, $1.50.

The Reading railroad system reports that its coal shipment (estimated) for the week ending July 1st was 480,000 tons, of which 32,000 were sent to Port Richmond and 58,000 to New York waters.

NOTES OF THE WEEK.

George L. Crawford Master in the Philadelphia & Reading Receivership, filed a report in the United States Circuit Court at Philadelphia, July 5th, favoring the granting of receivers' certificates to the extent of $3,742,968. The matter came up before Judge Dallas, and it was arranged that counsel should be heard July 6th upon any objection that may be raised to the confirmation of the report. The report says that the total amount of the coal and coal account of the Coal and Iron Company is about $11,500,000, in about equal proportions, which are pledged for about $3,000,000, with about $568,000 still due to the Lehigh Valley Coal Company, and about $1,223,000 to other vendors, on account of the purchase thereof. The coal and coal accounts are pledged to the Philadelphia Finance Company, under a written continuing contract with it, under which the coal is a continuing lien for advances made from time to time, with the actual leases of all the coal-yards, thus placing the coal in the physical possession of the Finance company, and some of it is in that of its agents, the Philadelphia Warehouse Company.

The issue of these certificates and the extension of $2,500,000 of the Speyer loan, which has been arranged, will enable the Reading to go on for a short time without special trouble.

Judge Dallas, in the United States Circuit Court at Philadelphia, on July 6th, after the hearing, issued a decree confirming the report of the Master and empowering the receivers to issue certificates on behalf of the railroad to the amount of $3,545,523, and on behalf of the Coal and Iron Company to the extent of $197,526. The certificates will bear 6% interest and are made transferable by indorsement. Judge Dallas also filed an opinion dismissing the petition of John Lornie, of Scotland, a bondholder, for leave to intervene as a party plaintiff in the Thomas C. Platt receivership suit against the Reading. The rumor that the Vanderbilts are quietly buying a controlling interest in the reading road is not credited in Philadelphia nor elsewhere.

Bituminous.

The soft coal trade is dull, as is usual at this time of the year. Most of the companies are short of orders for shipment at the lower ports. There are rumors that 5c. is being given for present shipping orders, but they have not been verified. This shortage of orders is, perhaps, a little more pronounced this year than formerly on account of the shutting down of some of the Eastern mills in consequence of the general dullness.

This is tantamout to saying that the soft coal trade is feeling the effects of the continued hard rate for money. The hope is expressed that the President's proclamation will revivify the waning industries of the East and Middle West, with the expectation that this will be followed by an increased demand for coal. The theory is good, but at least until the currency of the country is put on a firm foundation by the repeal of the Sherman Act the industrial depression must perforce continue.

The lack of demand for vessels has thrown a number on the market at the several ports. As yet freights have not fallen, but vessels are freely offered at the rates of last week. We quote as follows: From Philadelphia to Boston, Salem and Portland, 75c.; to Portsmouth, 80c.; Sound ports, 70c.; Wareham, $1; Bath, 76@80c.; Gardiner, 80@90c. alongside and towages; Bangor, 90c.; Baltimore rates are 10c. above Philadelphia rates, but vessels are scarce.

The car supply is very good, and transportation from mines to shipping points is in excellent condition.

NOTES OF THE WEEK.

Negotiations for a working agreement between the Tennessee Coal and Iron Company and the Sloss Iron and Steel Company are now in progress. Up to date some essential points have been settled. The basis is the division of territory, to be made according to outputs and market operations of the two interests. The average price at which these companies have been selling their coal is 90c. The new arrangement, it is believed, will enable them to receive $1.10.

The Huntingdon & Broad Top Mountain Railroad and Coal Company announces dividends of $1.75 per share on the preferred stock and $1.25 per share on the common stock, payable July 11th.

Boston. July 6

(From our Special Correspondent.)

Anthracite coal is still very quiet, but prices are well maintained. There is very little of interest in the market. We quote f. o. b. prices at New York in free burning coal: Stove, $4.40; egg, $4 00; free broken, $3.90; chestnut, $4.40. Lykens Valley (at Philadelphia), broken, $4.75; egg, $5.40; stove, $5.75; chestnut, $5.00.

Trade in soft coal is still very light and prices rule very low. Cumberland is steady, $3 65; New River and Pocahontas, $3.55; and Clearfield, $3.35.

Freight rates are quite easy, and in a few cases lower. From New York they are firmer, bringing 75@80c.; from Philadelphia, 75@80c.; from Baltimore, 75@85c.; from Newport News and Norfolk, 75c.; to Sound Points, 75@80c.

In a retail way there is very little doing in coal. Prices are steadily maintained however. Prices quoted here are: Stove, $6.25; nut, $6.25; egg, $6; furnace, $5.75; Franklin, $7.50; Lehigh egg, $6.25; Lehigh furnace, $6; soft coal, $4.25.

Buffalo. July 6.

(From our Special Correspondent.)

The anthracite coal trade is very quiet at the increased quotations, which are anything but satisfactory to consumers. The present schedule for anthracite coal is: Free on board vessels at Buffalo, per gross ton, grate, $5.20; egg, stove and chestnut, $5.45; on cars at Suspension Bridge and Buffalo, per gross ton, grate, $4.90; stove, egg and chestnut, $5.15; at retail, per net ton delivered screened within city limits, grate, $5.50; egg, stove and chestnut, $5.75; pea, $4; Blossburg selling at $4 per 2,000 lbs.

The shipments of coal by lake westward from Buffalo for the week ending June 30th were 76 270 net tons, distributed as follows:—18,705 to Chicago, 10,885 to Milwaukee, 9,850 to Duluth, 9,500 to Superior, 2,100 to Fort William, 800 to Ludington, 1,800 to Gladstone, 900 to Sault Ste. Marie, 3,590 to Green Bay, 760 to Bay City, 1,110 to Sheboygan, 1,300 to Saginaw, 1,650 to Maritowoc, 2,000 to Hancock, 2,930 to Racine, 600 to St. Clair, 1,200 to Ashland, 900 to Saginaw, 3,020 to Toledo, 1,180 to Detroit and 1,500 to Washburn. The rates of freight—50c. to Chicago, St. Clair, Sheyboygan, Sault Ste. Marie and Manitowoc; 65c. to Ludington; 60c. to Kenosha; 55c. to Racine; 35c. to Bay City; 30c. to Duluth, Ashland, Toledo, Detroit, Amherstberg, Gladstone and Washburn; 45c. to Milwaukee; and 40c. to Portage, Green Bay, Saginaw, Hancock and Menominee.

Bituminous coal continnes in good demand for tugs, vessels and manufacturers. Market steady at unchanged quotations. Supply good of all varieties.

Buffalo never did so much business by water in any previous month of June as last month. Six hundred vessels entered and cleared; nearly all came in loaded and about three-fourths went out with loads. Nearly 1,000,000 tons of coal have been shipped thus far this season to date.

The following statistics show the coal movement of this port to July 1st, this year, with comparisons of previous years: Receipts by railroads not reported by request; receipts by lake thus far this season, none; shipments by lake westward for month of June, 391,580 net tons, as compared with 374,069 tons in 1892 and 387,140 tons in 1891; for the season to July 1st, 933,050 net tons, as compared with 778,439 tons in 1892 and 832,750 tons in 1891. The receipts of coal by canal for the month of June, 8,885 net tons, as compared with 266 tons in 1892 and none in 1891; the shipments for June, 2,534 net tons, as compared with 3,758 tons in 1892 and 4,784 tons in 1891. The total receipts by canal from opening of navigation to July 1st, 13,445 net tons, as compared with 409 tons in 1892 and 481 tons in 1891; the shipments, 8,830 net tons, as compared with 10,490 tons in 1892 and 10,703 tons in 1891. The aggregate shipments by lake westward show an increase thus far this season over 1892 of 154,620 net tons, but a decrease under 1891 of 54,311 tons. During June this year the ruling rates of freight were 60@50c. to Chicago; 55@45c. to Milwaukee, 25@30c. to Duluth and Lake Superior ports, 50@40c. to Green Bay, 50c. to Sheboygan, 30c. to Toledo and Detroit, 60@55c. to Racine, 40c. to Saginaw and 30@35c. to Bay City. The canal shipments were made at 45c. per net ton to Syracuse, 90c. per gross ton to Hudson and 55 per net ton to Utica, all free on and off. A year ago coal freights to Chicago were 50c. and to Duluth 30c. per net ton. The important shipments of coal by lake thus far this season were as follows: Chicago, 430,754; Milwaukee, 176,494; Duluth, 86,110; Superior, 62,430 tons.

Chicago. July 6.

(From our Special Correspondent.)

The advance in anthracite for July appears to have put a quietus on business completely. Many of the country dealers inform traveling salesmen that as they will be in the city toward the latter part of the month they will look around then and do some shopping among the various shipping interests represented here before placing any orders. The bids for supplying the public schools were opened July 5 and were very irregular. The bid of the Philadelphia & Reading Company, through their agent here, Skeele, was a fair one according to the present circular—$6.50 for large egg and $6.75 for the smaller sizes; Pennsylvania Coal Co., by H. S. Van Ingen, egg $6.43, grate $6.20; E. H. Daniel & Co., large egg and smaller, $6.40; Lincoln Fuel Co., large egg $6.22, smaller sizes $6.50; Geo. Lill Coal Co., large egg $6.49 and smaller $6.69. These prices, it must be understood, are delivered by team in such quantities and at such times as the School Board may direct, and are on a parity with those for the municipal institutions referred to in a previous report. The contracts have not yet been awarded, but will, of course, go to the lowest bidder, as all are responsible firms. The fact that these bids after being opened are public property and are published as items of news by the daily press has an effect on the city as well as the country trade. Retail trade is exceedingly quiet, and will probably continue so for some time.

Bituminous coal has settled down to the usual midsummer quietude, but despite the shutting down of rolling mills and other large soft-coal consuming plants receipts are about equal to what they were a year ago. This is easily accounted for when it is considered that the city has, within the past 12 months, made an immense growth particularly in manufacturing lines, so that, notwithstanding the curtailment of consumption in some directions, the increase in others enables producers to place the extra tonnage thrown on the market without any especial effort. The mines in the northern district of Illinois and those in midland generally are running almost half time.

The policy pursued by the La Salle, Ill., producers in former years of contracting large blocks of their coal with the jobbing trade has been abandoned this season entirely, the operators proposing to market their own product. In the Peoria district the mines are making full time owing to increased railroad orders. Hocking coal has been advanced from $3 to $3.10 in open cars and $3.20 for box cars; and while business is rather quiet the circular is steadily held for commercial trade.

Coke is very quiet, as a large number of founderies and plants using this fuel have closed down for a month or six weeks.

Quotations are: $4.65 furnace; $5.05 foundry, crushed; $5.40 Connellsville; West Virginia: $3.90 furnace, $4.10 foundry; New River Foundry, $4.65; Walston: $4.65 furnace, $5 foundry.

Circular prices are at the following rates: Lehigh lump, $6.25; large egg, $5.85; small egg, range and chestnut, $6 10. Retail prices per ton are: Large egg, $6.75; small egg, range and chestnut, $6.75.

Prices of bituminous per ton of 2,000 lbs., f. o. b. Chicago, are: Pittsburg, $3.35; Hocking Valley, $3.10; Youghiogheny, $3 25; Illinois block, $2.50; Brazil block, $2.50.

Pittsburg. July 6.

(From our Special Correspondent.)

Coal.—The situation is without change. The water in the Ohio continues too low for boating purposes. The coal men feel very much disappointed. There are at least 13,000,000 bushels loaded and ready for shipment, with ample boats in port to carry the same to their destination. It is something very unusual for June to pass without a rise. It may come in July, but there is nothing certain. The railroad trade continues in a good shape, and large quantities are being shipped to the lake points. Prices show no change.

Connellsville Coke.—We omit prices; in fact, none can be named at present. There is trouble throughout the region, the operators having received a setback. On the Illinois Steel Company contract it is not thought Frick wanted an advance; on the contrary, he offered a reduction from the former contract. The action of the West Virginia people in cutting the price of coke has caused considerable excitement. It is reported that the Frick, the McClure and other companies are going to put the price of Connellsville coke away down to a point so low that the Pocahontas people cannot follow. There is going to be some fun in the coke market pretty soon. Week's shipments aggregated 115,640 tons, distributed as follows: To Pittsburg, 1,800 cars: to points east, 1,450 cars; to points west, 2,310 cars; total, 5,560 cars.

CHEMICALS AND MINERALS.

NEW YORK, Friday Evening, July 7.

Heavy Chemicals—Dealers while reporting a dull and stagnant market, express the belief that improvement may be expected within the month. The call for an extra session of Congress has not yet brought about any perceptible amelioration nor is such to be expected. Ready money at low rates is needed and this alone can relieve the market. Carbonated soda ash and alkali are without any activity. The glass men are idle and no business in these chemicals need be looked for, for some weeks at least. Caustic soda is quiet. There has been an increased demand for bleach which is indication, if nothing more, of a revival of business. Prices are nominally quoted as follows: Caustic soda, 60%, 2·95@3·10c.; 70%, 2 70@2·90c.; 74%, 2·72½@2·92½c.; 76%, 2·90@3·00c. Carbonated soda ash, 48%, 1·25@1·30c.; 58%, 1·15@1·25c.; Alkali, 48%, 1.20@1·30c.; 58%, 1·15@1·25c, according to package. Sal soda, English, on the spot, 1c. American ·95@1c.; bleaching powder, 2·25@2·37½c. In special cases carbonated soda ash and alkali will sell below the above figures.

Acids.—There is no change in prices to report this week, and we quote: [Acid, per 100 lbs. in

New York and vicinity, in lots of 50 carboys or more: Acetic, $1.87½@$2, according to quality; muriatic, 18°, 90c.@$1.10; 20°, $1@$1.25; 22°, $1.10@$1.35; nitric, 40°, $4; 42°, $4.50@$4.75; sulphuric, 80c.@$1.10; mixed acids, according to mixture, oxalic, $6.30@$6.50. Blue vitriol is quoted all the way from $3.50 to $3.75; glycerine for nitro-glycerine, 11½@12½c., according to quality and quantity.

Brimstone.—This market continues very quiet and devoid of features of interest. There are no stocks on the spot. Quotations for shipment are $19@$19.25 for best unmixed seconds, and $18@$18.25 for thirds.

Fertilizing Chemicals.—The market is dull and featureless, and an increasing difficulty is experienced in making collections. At the same time dealers find signs of encouragement in a few new sales and it is thought that the month will see a decided change for the better. There have been a few sales of Western blood at prices equivalent to $2.30 to $2.55 in New York. We quote this week: Dried blood, $2.30@$2.35 per unit for high grade, and $2.20@$2.25 for low grade; azotine, $2.35@$2.40; sulphate of ammonia, $3.15 for gas liquor, bone liquor is offering at $3.10. Concentrated phosphate (30% available phosphoric acid), 75c. per unit. Acidulated fish scrap, no stocks on hand; dried scrap is quoted at $27.50 f. o. b. fish factory. The fish catch is said to be light, but this is merely conjecture as the secretiveness of the fishermen renders it impossible to obtain actual amounts. Tankage, high grade, $27@$29; low grade, $26@$28. Bone tankage, $24@$25; bone meal, $24@$25.50.

The price of double manure salts as fixed by the syndicate is as follows: New York and Boston, $1.12; Philadelphia, $1.14½; Charleston and Savannah, $1.17 cwt., basis 48@50%, in 50 ton lots on foreign weights and analyses. Sulphate of potash, 90%-96%, basis 90%: New York and Boston, $2.07; Philadelphia, $2.09½; Charleston and Savannah, $2.127, sulphate of potash, 96-99%, basis 90%, is 4% higher.

Phosphates.—Quotations for high grade land rock, f. o.b. Charleston are $4.50@$4.75. Freights are $2 25.

Our special correspondent at Charleston writes as follows: There is very little doing in the fertilizer trade, and our manufacturers are waiting to see what is to be the result of the growing crop; it certainly looks very gloomy, and no one wants to buy when they have to pay cash. Especially is this true of ammoniates, which all say are too high with the cotton crop in its present condition. I think we are going to have a small crop and perhaps late too.

Muriate of Potash.—There is no new business of consequence to report. The market is quiet. The prices fixed by the syndicate for 1893 are as follows: New York or Boston, $1.78; Philadelphia, $1.80½; Southern ports, $1.83.

Kainit.—Practically nothing is doing in kainit. Quotations for shipments previous to September are as follows: New York, Philadelphia and Boston, $8.75 for foreign, invoice weight and test, and $9 for actual weight; Charleston, Savannah and Wilmington, $9.50 for invoice weight and test, and $9.75 for actual weight. Shipments after September 1st, 25c. higher.

Nitrate of Soda.—The nitrate market is dull and prices have slightly fallen, without, however, any increase of business. Quotations are: $1.70@$1.75 for goods on the spot and $1.75@$1.80 for futures, with no business to report in the latter. It is said that $1.80 just covers cost of importing.

Messrs. Mortimer & Wisner, the well known nitrate brokers of this city, send us the following interesting statistics, issued under date of July 1st:

	1893.	1892.	1891.
	Bags.	Bags.	Bags.
Imported into A. ports f. West Coast S. A., Jan. 1, 1893, to date.....	380,192	406,219	318,845
Imported into Atlantic ports from Europe.....	16.712	.....	18,802
	396,904	406,219	337,647
Stock in store and afloat July 1, New York.....	75,049	77,457	74,540
Boston.....	500	1,000	2,000
Philadelphia.....	.....	...	.....
Baltimore.....	4,500	6,500	2,000
To arrive, actually sailed	370,000	136,000	210,000
Visible supply to Oct. 1..	450,049	220,957	288,540
Additional charters.....	211,000	110,000	200,000
Total supply, when shipped.....	661,049	330,957	488,540
Stock on hand, Jan. 1, 1893.	15,454	53,585	36,454
Deliveries past month....	55,980	84.785	31,259
Deliveries Jan. 1 to date.	332,309	374,847	297,561
Total yearly deliveries..	.....	685,158	634,207
Prices current July 1....	1·65	1·70	1·95@2c.

Included in the deliveries of 1893 are 9,500 bags shipped to European ports.

Liverpool. June 28.

(Special Correspondence of Jos. P. Brunner & Co.)

The depression in heavy chemicals still continues and there is very little business moving, buyers being disinclined to operate except from hand to mouth, in the face of a falling market.

Soda Ash.—Orders are very scarce and prices quite unreliable, varying according to make, quantity, market, etc. For Leblanc ash quotations are quite nominal as follows: Caustic ash, 48%, £4 10s.@£5 per ton; 57-58%, £5 10s.@£5 15s. per ton; carb. ash, 48%, £4 15s.@£5 per ton; 58%, £5 5s.@£5 15s. per ton, net cash; ammonia ash, 58%, weak, at about £4 7s. 6d. per ton less 2½%. Soda crystals are in moderate request at £2 17s. 6d.@£3 per ton less 5%.

Caustic soda is flat and stocks accumulating at makers' works, there being no outlet for the article. It is expected that prices will be reduced shortly. Quotations vary considerably, according to export market, and nominal range may be quoted as follows: 60%, £8@£9 per ton; 70%, £9@£10 per ton; 74%, £10@£11 per ton; 76%, £11 10s.@£12 per ton, net cash. For parcels under 10 tons, 5s. per ton extra is charged.

Bleaching powder is quiet but prices are well maintained at £8 10s.@£8 15s. per ton net cash for hardwood casks.

Chlorate of potash is unsalable on the spot and 8¼d.@8¾d. are nominal quotations, but no buyers. We quote: July 8¼d.@8¼d. and July-December 7⅞d.@7¾d. less 5%. For 1894 6¾d. is the quotation for all quarters except United States, for which latter quarter the Alkali Company are declining to quote for the present.

Bicarb. of soda is held for £6 15s. per ton less 2½% for 1-cwt. kegs, with usual allowances for larger packages.

Sulphate of ammonia is very scarce and the difficulty is to find any sellers. Prices are still moving upward and £13 10s.@£13 15s. per ton less 2½% is about nearest value to-day for good gray 24-25%, in double bags, f.o.b. Liverpool.

Nitrate of soda is better, being held in fewer hands, and £9 5s.@£9 7s. 6d. per ton, less 2½%, is demanded to day for double bags f.o.b. here.

Carbonate of ammonia is dearer at 3½d. per lb. for lump and 3½d. for powdered, less 2½%.

CURRENT PRICES.

These quotations are for wholesale lots in New York unless otherwise specified.

Acid—Acetic, chem. pure.....17@.19
Commercial, in bbls. and cbys...01¾@.02
Carbonic, liquefied, ℔ lb..... ....18@.25
Chromic, chem pure, ℔ lb 1.00
for batteries.....40
Hydrobromic, dilute, U. S. P....25@.30
Hydrocyanic, U. S. P..... .....45@.50
Hydrofluoric.....20@.30
Alcohol—95%, ℔ gall.....$2.30@$2.40
Absolute.....$3.80
Ammoniated.....$2.80
Alum—Lump, ℔ cwt.....$1.75@$1.85
Ground, ℔ cwt..... .....$1.85@$1.90
Powdered, ℔ lb..... .....04½@.05
Lump ℔ ton, Liverpool..... £5
Aluminum Chloride—Pure, ℔ lb.$1.25
Amalgamating solution, ℔ lb..... .60
Sulphate, ℔ cwt ..... $1.90@$2.50
Ammonia—Sal., in bbl. lots, ℔ lb.....07½@.08
Carbonate, ℔ lb., English and German, 07½@.08
Muriate, white, in bbls., ℔ lb..... .08½
Aqua Ammonia—(in cbys) 3°℔lb.03@.04
20°, ℔ lb.....04@.05
26°, ℔ lb..... .....04¾@.05
Antimony—Oxymur, ℔ lb..... .04@.06
Regulus, ℔ lb.... .....10@.11½
Argols—Red, powdered, ℔ lb..... .15
Arsenic—White, powdered ℔ lb.03@.03¾
Red ℔ lb.....065@.07
Yellow.....08@.09
White at Plymouth, ℔ ton.....£12 2 6
Asbestos—Canadian, ℔ ton.....$50@$300
Italian, ℔ ton, c. i. f. L'pool....£18@£60
Ashes—Pot, 1st sorts, ℔ lb.....4.75@5
Pearl .....05¾@.06½
Asphaltum—
Prime Cuban, ℔ lb.....04@.05
Hard Cuban, ℔ ton..... ....$28.00@$30.00
Trinidad, refined, ℔ ton...$30.00@$35.00
Egyptian and Syrian, ℔ lb.....05@.07½
Californian, at mine, ℔ ton$12.00@$26.00
at San Francisco, ℔ ton.$15.00@$29.00
Barium—Carbonate, pure, ℔ lb..... .45
Carbonate, commercial, ℔ lb.... .05@.10
Chlorate, crystal, ℔ lb..... .75
Chloride, commercial, ℔ lb..... .05@.10
pure, ℔ lb..... 16
Iodide, ℔ oz..... 40
Nitrate, ℔ lb..... .....06½@.07
Sulph., Am. prime white, ℔ ton$17.50@$19
Sulph., foreign, floated, ℔ ton.....$21@$24
Sulph., off color, ℔ ton.....$11.50@$15.00
Carb., lump, f. o. b. L'pool, ℔ ton.....£6
No. 1, Casks, Runcorn, " " .. £4 10 0
No. 2, bags, Runcorn, " " .. £3 15 0
Bauxite—℔ ton..... .....$10.00
Bichromate of Potash—Scotch, ℔ lb..... .....11@.12
American, ℔ lb..... .....11@.12
Bichromate of Soda—℔ lb... .09½@.10
Borax—Refined, ℔ lb., in car lots.08@.09
San Francisco..... .....08@.08¾
Concentrated, in car lots..... .07½@.08
Refined, Liverpool ℔ ton..... ....£2
Bromine—℔ lb..... .....25@.35
Cadmium Minion—℔ lb..... $2.00
Cadmium Iodide—℔ lb..... .....$5.50
Chalk—℔ ton ....$1.50@$2.25
Precipitated, ℔ lb..... .....04@.06
China Clay—English, ℔ ton..$13@$18.00
Domestic, ℔ ton.....$9@$11
Chlorine Water—℔ lb..... 10
Chrome Yellow—℔ lb..... .....10@.25
Chrome Iron Ore—℔ ton, San Francisco..... .....$10.00
Chromalum—Pure, ℔ lb.....35@.40
Commercial, ℔ lb..... .....02½
Cobalt—Oxide, ℔ lb..... .....$1.60@$1.70
Copper—Sulph. English Wks. ton £20@£21
Vitriol (blue), ordinary, ℔ lb. 03¼@.03¾
" extra..... .....04½
Nitrate, ℔ lb..... 40
Copperas—Common, ℔ 100 lbs.. .85@.95
Best, ℔ 100 lbs..... .....$1.35@$1.50
Liverpool, ℔ ton, in casks....£2 @£2 10s.
Corundum—Powdered, ℔ lb.. .04½@.09
Flour, ℔ lb..... 03
Cryolite—Pow., ℔ lb., bbl. lots....07@.08
Emery—Grain, ℔ lb. (℔ kg.).... .04½@.05
Flour, ℔ lb..... .....02½@.04
Epsom Salt—℔ lb..... .....01@.01½
Feldspar—Ground, ℔ ton..$6.00@$10.00
Crude..... .....$2.00@$3 00
Fluorspar—Powdrd, No. 1, ℔ ton.$20@$30
Lump, at mine..... .....$6@$8
French Chalk—
Fuller's Earth—Lump, ℔ ton. $16@$20
Glauber's Salt—in bbls., ℔ lb...01@.01¼
Glass—Ground, ℔ lb ....09@.10
Gold—Chloride, pure, crystals, ℔ oz. $12.00
pure, 15 gr., c. v., ℔ doz. $5.40
liquid, 15 gr., g. s. v., ℔ doz..... .....$5.50
Chloride and sodium, ℔ oz $6.00
15 gr., c.v., ℔ doz. $2.75
Oxide, ℔ oz..... .....$27.25
Gypsum—Calcined, ℔ bbl... $1.25@$1.50
Land Plaster..... .....
Iodine—Resublimed, ℔ oz..... .30@ 33
Iridium—Oxide ℔ lb..... .....$90
Iron—Nitrate, 40°, ℔ lb ..... .01@.01½
47°, ℔ lb..... .02@.02½
Kaolin—*See China Clay.*
Kieserite—℔ ton..... .....$9@$10
Lead—Red, American, ℔ lb ...06¾@.07¼
White, American, in oil, ℔ lb. .06¼@.07½
White, English, ℔ lb., in oil.. .08¼@.08¾
Acetate, or sugar of, white.... .06@.06½
Granulated..... .....
Nitrate..... .....09@.12
Lime Acetate—Am. Brown..... .90@.95
" Gray .$1.75@$1.87½
Litharge—Powdered, ℔ lb.. .05½@.07½
English flake, ℔ lb..... .....06@.09½
Magnesite—Crude, ℔ ton of 1,015 kilos..... .....$14.75
Calcined, ℔ ton of 2,240 lbs.....$22.00
Brick, ℔ ton of 2,240 lbs..... .....$47.50
Manganese—Ore, per unit..... .23@.28
Oxide, ground, ℔ lb ..... .02½@.06¾
Mercuric Chloride—(*Corrosive Sublimate*) ℔ lb..... .....62@.64
Powdered, ℔ lb..... 5
Marble Dust—℔ bbl..... .$1.25@$1.50
Metallic Paint—Brown ℔ ton. $20@$25
Red..... .....$20@$25
Mineral Wool—Ordinary slag... .01½
Ordinary rock..... .....02½
Ground, ℔ ton..... .....
Mica—In sheets according to size.
1st quality, ℔ lb..... .....25@$6.00
Naphtha—Black..... .....
Nitre Cake—℔ ton..... .....$10.00
Ochre—Rochelle, ℔ lb..... .01¼@01¾
Washed Nat Oxf'rd, Lump, ℔lb. 0½@.06½
Washed Nat Oxf'rd, Powder, ℔lb. 07@.07½
Golden, ℔ lb..... .....03@.05
Domestic, ℔ ton.. .. .. $12@$20
Oils, Mineral—
Cylinder, light filtered, ℔ gal... .14@.16
Dark filtered, ℔ gal.... .10@.13
Extra cold test, ℔ gal. .24@.24
Dark steam refined, ℔ gal.. .07½@.12
Phosphorus—℔ lb..... .....50@.55
Precip., red, ℔ lb..... .....80@.85
white, ℔ lb..... .....85@.90
Platinic Chloride—Dry, ℔ oz $7
Plumbago—Ceylon, ℔ lb..... .04@.05
American, ℔ lb..... .....05@ 0
Potassium—Cyanide, ℔ lb., C. P. 67%, ℔ lb.... .52 .0
mining... .28@.30
Bromide, domestic, ℔ lb..... .28@ 32
Chlorate, English, ℔ lb.. .18@.18¼
Chlorate, powdered, English, ℔ lb.. .18¼@.19
Carbonate, ℔ lb., by casks, 82% .04½@.05
Caustic, ℔ lb., pure slick..... .05½@.06
Iodide, ℔ lb..... .....$2.58@$2.80
Nitrate, refined, ℔ lb..... .....06@.07
Bichromate, ℔ lb..... .....10@.11½
Yellow Prussiate, ℔ lb..... .21½@ 22½
Red Prussiate, ℔ lb..... .....39@.45
Pumice Stone—Select lumps, ℔ lb.03½@.15
Original cks., ℔ lb..... .....01½@.02
Powdered, pure, ℔ lb..... .01¼@.01¾
Pyrites—Non-cupreous, p. units. .12@.13
Quartz—Ground, ℔ ton..... .$6.00@$10.00
Rotten Stone, Powdered, ℔ lb. 03¾@.03½
Lump, ℔ lb..... .....06@.07
Original cks, ℔ lb..... .....04½@.05½
Rubbing stone, ℔ lb..... .....03½@.04
Sal Ammoniac—lump, in bbls., ℔ lb.80½
Salt—Liverpool, ground, ℔ sack..... .70
Domestic, fine, ℔ ton.....$7@$7.50
Common, fine, ℔ ton..... .....$4.50@$5
Turk's Island, ℔ bush..... .....26@.28
Salt Cake—℔ ton..... .....$10 00@$15.00
Saltpeter—Crude, ℔ lb..... .....03¼@.04
Soapstone—Ground, ℔ ton..... .$6@$
Block and slab according to size.
Sodium—Prussiate, ℔ lb..... .....22@.24
Phosphate, ℔ lb..... .....04@.05
Stannate, ℔ lb..... .....06@.12
Tungstate, ℔ lb..... .....30@.35
Hyposulphite, ℔ cwt., in casks $1.70@ $1.80
Strontium—Nitrate, ℔ lb.. .. ..@.09
Sulphur—Roll, ℔ lb..... .....01½@.01¾
Flour ℔ lb..... .....01¾@.02
Sylvinit, 27@35%, S.O.P., per unit, 3.75
Talc—Ground French, ℔ lb.....01¼@.01½
American No. 1, ℔ lb..... .01¼@.01½
American No 2..... .006
Terra Alba—French, ℔ lb..... .65@.80
English, ℔ lb..... .....65@.80
American, No. 1, ℔ lb..... .....60@.80
American, No. 2, ℔ lb..... .....40@.50
Tin—Crystals, in kegs or bbls.... .14@.15
feathered or flossed. .2
Muriate, single..... .....07@.12
Double or strong, 54° B..... .....10@.16
Oxymur, or nitro..... 19
Vermilion—Imp. English, ℔ lb. .80
Am. quicksilver, bulk.....57 @.59
Am. quicksilver, bags.....58 @ .60
Chinese..... .....85 @$1.00
Trieste..... .....90 @ .95
American..... .....11½@ .12
Zinc White—Am., Dry, ℔ lb .04½@.05
Antwerp, Red Seal, ℔ lb..... .06¼@.07
Paris, Red Seal, ℔ lb..... .07⅝@.08
Muriate solution..... 06
Sulphate crystals, in bbls., ℔ lb.03@.03¾

THE RARER METALS.

Aluminum—℔ lb..... .....80@.85
Arsenic—(Metallic), per lb..... .40
Barium—(Metallic), per gram.... $4.00
Bismuth—(Metallic), per lb..... $2.00
Cadmium—(Metallic), per lb.. $1@$1.50
Calcium—(Metallic), per gram....$10.00
Cerium—(Metallic), per gram..... $7.50
Chromium—(Metallic), per gram. $1.00
Cobalt—(Metallic), per lb..... $6.00
Didymium—(Metallic), per gram. $9.00
Erbium—(Metallic), per gram.... $7.50
Gallium—(Metallic), per gram....$140.00
Glucinum—(Metallic), per gram..$12.00
Indium—(Metallic), per gram..... $9.00
Iridium—(Fused), per oz..... $42.00
Lanthanum—(Metallic), per gr..$10.00
Lithium—(Metallic), per gram....$10.00
Magnesium—(Powdered), per lb. $4.00
Manganese—(Metallic), per lb..... $1.10
Chem. pure, per oz..$10.00
Molybdenum—(Metallic), per gm .50
Niobium—(Metallic), per gram... $5.00
Osmium—(Metallic), per oz.....$65.00
Palladium—(Metallic), per oz....$20.00
Platinum—(Plate), per oz..... $9.75
Potassium—(Metallic), per lb.....$25.00
Rhodium—(Metallic), per gram.. $5.00
Ruthenium—(Metallic), per gm.. $5.50
Rubidium—(Metallic), per gram. $2.00
Selenium—(Metallic), per oz..... $1.80
Sodium—(Metallic), per lb..... .50@.75
Strontium—(Metallic), per gm.... .80
Tantalium—(Metallic), per gram. $9.00
Telurium—(Metallic), per lb..... $5.00
Thallium—(Metallic), per gram.. .20
Titanium—(Metallic), per gram.. $2.25
Thorium—(Metallic), per gram...$17.00
Tungsten—(Metallic), per lb..... .8
Uranium—(Oxide), per lb.. ..... $5.00
Metallic, per gm..... .00
Vanadium—(Metallic), per gm...$22.00
Yttrium—(Metallic), per gram.... $9.00
Zirconium—(Metallic), per oz.... $5.00

NEW YORK MINING STOCK QUOTATIONS.

DIVIDEND-PAYING MINES.

NAME AND LOCATION OF COMPANY.	July 1. H.	July 1. L.	July 3. H.	July 3. L.	July 4. H.	July 4. L.	July 5. H.	July 5. L.	July 6. H.	July 6. L.	July 7. H.	July 7. L.	SALES.
Adams, Colo.													
Alice, Mont.							.30						1,000
Amador, Cal.													
Atlantic, Mich.													
Belcher, Nev.													
Belle Isle, Nev.													
Bodie Cons., Cal.													
Bos. & Mont., Mont													
Breece, Colo.													
Bulwer, Cal.													
Caledonia, S. Dak.													
Catalpa, Colo.													
Chrysolite, Colo.													
Colorado Central, Colo.													
Commonwealth, Nev.													
Comstock T. bonds, Nev.									.10				500
" scrip., Nev.													
Cons. Cal. & Va., Nev.													
Crown Point, Nev.													
Deadwood, Dak.													
Enterprise													
Eureka, Cons., Nev.													
Father de Smet, Dak.													
Freeland, Colo.													
Gould & Curry, Nev.													
Grand Prize, Nev.													
Hale & Norcross, Nev.													
Homestake, Dak.													
Horn-Silver, Utah	2.75												100
Independence, Nev.													
Iron Hill, Dak.													
Iron Silver, Colo.													
Leadville Cons., Colo.									.13	.12			600
Little Chief, Colo.	.18												300
Martin White, Nev.													
Moulton, Mont.													
Mt. Diablo, Nev.													
Navajo, Nev.													
N. Belle Isle, Nev.													
Ontario, Utah													
Ophir, Nev.													
Overman, Nev.													
Plymouth, Cal.													
Quicksilver, Pref., Cal.													
" Com., Cal.													
Quincy, Mich.													
Robinson Cons., Colo.													
Savage, Nev.													
Sierra Nevada, Nev.													
Silver Cord, Colo.													
Silver King, Ariz.													
Silver Min. of L. Valley													
Small Hopes, Colo.													
Standard Cons., Cal.													
Yellow Jacket, Nev.													

NON-DIVIDEND-PAYING MINES.

NAME AND LOCATION OF COMPANY.	July 1. H.	July 1. L.	July 3. H.	July 3. L.	July 4. H.	July 4. L.	July 5. H.	July 5. L.	July 6. H.	July 6. L.	July 7. H.	July 7. L.	SALES.
Alpha., Nev.													
Alta, Nev.													
American Flag, Colo.													
Andes, Cal.													
Astoria, Cal.													
Augusta, Ga.													
" bonds.													
Barcelona, Nev.													
Belmont, Cal.													
Best & Belcher, Nev.													
Bonanza King, Cal.													
Brunswick, Cal.											.04		200
Bullion, Nev.													
Butte & Bost., Mont.													
Castle Creek, Idaho													
Chollar													
Comstock T., Nev.	.08	.07									.06		1,100
Con. Imperial, Nev.													
Con. Pacific, Cal.													
Crescent, Colo.													
Del Monte, Nev.													
El Cristo, Rep. of Col.													
Emmett, Colo													
Exchequer, Nev.													
Independence, Nev.													
Julia, Nev.													
Justice, Nev													
King & Pembroke													
Lacrosse, Colo.	.04												500
Lee Basin, Colo.													
Mexican, Nev.													
Minnesota Iron													
Monitor, Colo.													
Monte Cristo, Rep. of C.													
Nevada Queen, Nev.													
N. Standard, Cal.													
N. Commonwealth, Nev.													
Occidental, Nev.													
Oriental & Miller, Nev.													
Phœnix Lead, Colo.													
Phœnix of Ariz.													
Potosi, Nev.													
Rappahannock, Va.													
S. Sebastian, S. Sal.													
Santiago													
Scorpion, Nev.													
Seg. Belcher, Nev.													
Shoshone, Idaho													
Silver Hill, Nev.													
Sullivan Con., Dak.													
Sutro Tunnel, Nev.													
Syndicate, Cal.													
Tornado Con., Nev.													
Union Cons., Nev.													
Utah, Nev.													

*Ex-dividend. +Dealt in at New York Stock Ex. Unlisted securities. ‡Assessment paid. ¶Assessment unpaid. Dividend shares sold, 2,500. Non-dividend shares sold, 1,800. Total shares sold, 4,300.

BOSTON MINING STOCK QUOTATIONS.

NAME OF COMPANY.	June 30.		July 1.		July 3.		July 4.		July 5.		July 6.		SALES.
Atlantic, Mich.	7.25	7 13	7.25	7.00	6.00								265
Bodie, Cal.													
Bonanza Development.													
Bost. & Mont., Mont.	18.00	17.38	19.00	18.50	19.00	18.75			19.25	19.00			1,442
Breece, Colo.													
Calumet & Hecla, Mich.	280		280		280	279			280				35
Catalpa, Colo.													
Central, Mich.													
Cœur d'Alene, Id.													
Con. Cal. & Va., Nev.													
Dunkin, Colo.													
Eureka, Nev.													
Franklin, Mich.	10.00	9.50	9.75		10 00	9.88			10.00		10.00		422
Honorine, Utah													
Horn Silver, Utah													
Kearsarge, Mich.							6.25	6.00					50
Lake Superior, Iron.													
Little Pittsburg, Colo.													
Minnesota Iron, Minn.													
Napa, Cal.													
Ontario, Utah													
Osceola, Mich.	26.50	24.25	25.00	24.50	25 25				25.25		25.25		460
Quincy, Mich.					107½				107½				10
Ridge, Mich.													
Sierra Nevada, Nev.													
Silver King, Ariz.													
Stormont, Utah													
Tamarack, Mich.									140	139	139	138	62
Tecumseh, Mich.													

NAME OF COMPANY.	June 30.		July 1.		July 3.		July 4.		July 5.		July 6.		SALES.
Allouez, Mich.					.40								100
Arnold, Mich.													
Aztec, Mich.													
Brunswick, Cal.													
Butte & Boston, Mont.	6.00				6.50						6.25		600
Centennial, Mich.	3.50		4.25	4.00	4.00						4.00	3 00	3.00 2.25 5,535
Colchis, N. Mex.													
Copper Falls, Mich.													
Crescent, Colo.													
Dana, Mich.													
Don Enrique, Mex.													
Geyser, Colo.													
Hanover, Mich.													
Humboldt, Mich.													
Hungarian, Mich.													
Huron, Mich.													
Mesnard, Mich.													
National, Mich.													
Native, Mich.													
Oriental & M., Nev.													
Phœnix, Ariz.													
Pontiac, Mich.													
Rappahannock, Va.													
Santa Fe, N. Mex.													
Shoshone, Idaho.													
South Side, Mich.													
Tamarack, Jr., Mich.													
Washington, Mich.													
Wolverine, Mich.													

Dividend shares sold, 2,746. Non-dividend shares sold, 6,255. Total shares sold, 9,001.

DIVIDEND-PAYING MINES.

	Name and Location of Company.	Capital Stock.	Shares. No.	Shares. Par	Assessments. Total levied.	Assessments. Date and amount of last	Dividends. Total paid.	Dividends. Date & amount of last.	
1	Adams, s. L. C.	Colo..	$1,500,000	150,000	$10	*	$637.500	Jan..	1892 .05
2	Alaska-Treadwell, g.	Al'ska	5,000,000	200,000	25		1,500,000	April	1893 .25
3	Alice, s.	Mont.	10,000,000	400,000	25	*	975,000	Nov..	1891 .06¼
4	Alma & Nel Wood., g	Idaho	300,000	30,000	10	*	60,000	Jan:	1889 .50
5	Amador, g.	Cal.	1,250,000	250,000	5	*	31,250	Aug..	1890 .12½
6	American, g.	Colo..	3,000,000	300,000	10	*	225,000	Mar..	1892 .05
7	American Belle, s.g.c	Colo.	2,000,000	400,000	5	*	50,000	April	1891 .12½
8	Americ'n & Nettie, g.s	Colo..		300,000			175,400	Mar..	1892 .05
9	Atlantic, c.	Mich..	1,000,000	40,000	25	280,000 April	1875	$1.00	700,000 Feb.. 1891 1.00
10	Argenta, s.	Nev..	10,000,000	100,000	100	335,000 July.	1889	.10	40,000 Feb.. 1880 .20
11	Argyle, g.	Colo..	1,000,000	1,000,000	1	*			20.000 Mar. 1892 .01
12	Aspen Mg. & S., s. L.	Colo..	2,000,000	200,000	10	*			780,000 June 1893 .10
13	Aurora, I.	Mich..	2,500,000	100,000	25				650,000 Feb.. 1893 2.00
14	Badger, s	Ont..	250,000	50,000	5				37,500 Mar. 1890 .25
15	Bald Butte	Mont.	250,000	250,000	1	*			72,500 Mar.. 1892 .03
16	Bates Hunter, s. g.	Colo..	1,000,000	1,000,000	1				Dec.. 1891 .00¾
17	Belle Isle, s.	Nev..	10,000,000	100,000	100	230 00 Aug.	1892	.10	300,000 Dec.. 1879 .25
18	Belcher, s. g.	Nev..	10,400,000	104,000	100	3,16 000 May	1892	.25	15,397,000 April 1876 1.00
19	Bellevue, Idaho, s. L.	Idaho	1,250,000	125,000	10	1: 000 Dec.	1889	.25	200,000 Jan.. 1890 .10
20	Best Friend	Colo.	1,000,000	1,000,000	1				90,000 Feb.. 1892 .01
21	Bi-Metallic, s. G.	Mont.	5,000,000	200,000	25				2,300,000 April 1893 .20
22	Bodie Con., g. I.	Cal..	10,000,000	100,000	100	550,000 June	1890	.25	1,602,572 April 1885 .50
23	Boston & Mont., G.	Mont.	2,500,000	250,000	10	*			520,000 June 1886 .15
24	Boston & Mont., C. S.	Mont.	3,125,000	125,000	25	*			2,075,000 Nov.. 1891 1.00
25	Brooklyn Lead, L. S.	Utah.	500,000	50,000	10				127,000 July. 1887 .05
26	Brotherton, I.	Mich.	2,000,000	80,000	25	*			120,000 Mar.. 1893 .50
27	Bulwer, G.	Cal..	10,000,000	100,000	10	130,000 Aug..	1889	.25	190,000 Oct.. 1892 .05½
28	Bunker Hill & S. s. L.	Idaho	3,000,000	300,000	10	*			150,000 Oct.. 1888 .06
29	Caledonia, g.	Dak..	10,000,000	100,000	100	505,000 May	1885	.15	192,000 Oct.. 1890 .08½
30	Calliope, s.	Colo..	1,000,000	1,000,000		*			140,000 Jan.. 1891 .00
31	Calumet & Hecla c	Mich..	2,500,000	100,000	25	1,200,000			39,350,000 May. 1893 5 00
32	Centen'l-Eureka, s. L.	Utah.	1,500,000	30,000	50				675,000 June 1893 .50
33	Central, c.	Mich..	500,000	20,000	25	100,000 Oct..	1861	.65	1,970,300 Feb.. 1891 1.00
34	Champion, g	Cali..	340,000	34,000	10				132,906 May.. 1893 .10
35	Chrysolite, s. L.	Colo..	10,000,000	200,000	50	*			1,650,000 Dec.. 1884 .25
36	Clay County, g.	Colo..	200,000	200,000	1	*			56,000 Nov.. 1891 .02
37	Clinton Con, g.	Cal..	5,000,000	100,000	5				90.000 Nov.. 1891 .10
38	Cœur D'Alene, s. L.	Idaho	5,000,000	500,000	10	*			310,000 Nov.. 1891 .02
39	Colorado Central, s. L.	Colo..	2,750,000	275,000	10	*			530,000 April 1893 .05
40	Commonwealth, s.	Nev..	10,000,000	100,000	100	190.000 Sept.	1892	.10	20,000 Nov.. 1890 .20
41	Confidence, s. L.	Nev..	2,496,000	24,960	100	1,589.550 Aug..	1892	.50	199,680 April 1889 1.00
42	Cons. Cal. & Va., s. G	Nev..	21,600,000	216,000	100	108,000 Jan..	1885	.20	3,682,800 Aug. 1891 .50
43	Contention, s.	Ariz..	12,500,000	250,000	50				2,637.500 Aug. 1892 .20
44	Cook's Peak, s.	N. M..	2,000,000	200,000	10				114,532 Nov. 1892 .05
45	**Cop. Queen Con., c.	Ariz..	2,000,000	200,000	10				1,460,000 May. 1893 .50
46	Coptis.	Nev..	10,000,000	100,000	100				67,000 July.. 1892 .12
47	Cortes, s.	Nev.	1,500,000	300,000	05	*			687,000 Mar.. 1892 .50
48	Crescent, s. L. G.	Utah.	15,000,000	600,000	25	60,000 Oct.	1892	.10	238,000 Oct.. 1888 .03
49	Crown Point, G. s.	Nev...	10,000,000	100,000	100	2,700,000 Sept.	1892	.25	11,898,000 Jan.. 1875 2.00
50	Cumberland, L. s.	Mont.	5,000,000	500,000	10	*			15,000 Nov. 1889 .08
51	Daly, s. L.	Utah.	5,000,000	150,000	20				2,800,000 June 1893 .25
52	Deer Creek, s. G.	Idaho	1,000,000	200,000	5	*			20,000 June 1889 .06
53	Deadwood-Terra, G.	Dak..	5,000,000	200,000	25	*			1,150,000 Oct.. 1892 .05
54	DeLamar, s. G.	Idaho	2,000,000	400,000	5				800,000 April 1893 .37½

NON-DIVIDEND-PAYING MINES.

	Name and Location of Company.	Capital Stock.	Shares. No.	Shares. Par	Assessments. Total levied.	Assessments. Date and am't of last.	
1	Alliance, s. G.	Utah.	$100,000	100,000	$1	$120,000	Feb.. 1891 .20
2	Allouez, c.	Mich.	2,000,000	80,000	25	737,000	Jan.. 1890 .70
3	Alpha Con., G. s.	Nev..	3,000,000	30,000	100	209.000	Sept. 1892 .10
4	Alta, s.	Nev..	10,080,000	100.800	100	3,369,880	Jan. 1892 .10
5	American, c.	Idaho	5,000,000	500,000	100		
6	American Flag, s.	Colo..	1,250,000	125,000	1	300,000	June 1887
7	Amity, s.	Colo..	250,000	250,000	20		
8	Anchor, s. L. G.	Utah.	3,000,000	150,000	5	410,000	June 1890 .20
9	Anglo-Montana, L.	Mont.	600,000	120,000	125		
10	Appalachian, g.	N. C.	1,750,000	1,400,000	20		
11	Arizona, c.	Ariz..	3,575,000	160,000	2		
12	Astoria, G.	Cal..	200,000	100,000	5		
13	Atlanta, g. s.	Idaho	3,250,000	650,000	25		
14	Barcelona, G.	Nev..	5,000,000	200,000	5	*	
15	Bear Creek	Idaho	100,000	20,000	1		
16	Belmont, G.	Cal..	500,000	500,000	100	*	
17	Belmont, s.	Nev..	5,000,000	50,000	100	735,000	April 1886 .10
18	Best & Belcher, s. G.	Nev..	10,080,000	100,800	10	2,405,275	Aug.. 1892 .25
19	Black Oak, G.	Cal..	3,000,000	300,000	100	*	
20	Boston Con., G.	Cal..	10,000,000	100,000	1	170,000	Nov.. 1893 .25
21	Brownlow, G.	Colo..	250,000	250,000	5		
22	Brunswick, G.	Cal.	2,000,000	400,000	2		
23	Buckeye, s. L.	Mont.	1,000,000	500,000	100		
24	Bullion, s. G.	Nev.	10,000,000	100,000	100	2,890,000	Aug. 1892 .25
25	Burlington, g. s.	Cal..	10,000,000	100,000			
26	Butte & Boston, c. s.	Mont.	5,000,000	200,000	10		
27	Butte Queen, G.	Cal..	1,000,000	100,000	1	6,000	Jan.. 1892 .04
28	Calaveras, G.	Cal..	500,000	500,000	5		
29	Calaveras Con., g.	Cal..	800,000	160,000	10		
30	California, G.	Cal..	1,000,000	100,000	5	9,000	Mar.. 1892 .03
31	California Con. I. Q.	Cal..	2,250,000	450,000	10		
32	Camille, g	Ga.	1,500,000	150,000	5		
33	Carisa, G.	Wy..	500,000	100,000	2	*	
34	Carupano, G. S. L. C.	Ven..	200,000	100,000	2	*	
35	Cashier, G. s.	Colo.	500,000	250,000	100	*	
36	Challenge Con., g. s.	Nev..	5,000,000	50,000	10		
37	Cherokee, G.	Cal..	1,500,000	150,000	100		
38	Chollar, s. G.	Nev..	11,200,000	112,000	2	1,820,000	May.. 1892 .50
39	Cleveland, T.	Dak..	1,000,000	500,000	10	*	
40	Colchis, s. G.	N. M..	500,000	150,000	5		
41	Colorado, s.	Colo..	1,625,000	325,000	1		
42	Comstock, s.	Utah.	1,250,000	250,000	100		
43	Comstock Tun.	Nev..	10,000,000	100,000	100	35,000	Mar.. 1887 .15
44	Con. Imperial, G. s	Nev..	5,000,000	50,000	50	2,062,500	Jan.. 1892 .25
45	Con. New York, s. G.	Nev..	5,000,000	100,000	100	110,000	Mar.. 1892 .10
46	Con. Pacific, G.	Cal..	6,000,000	60,000	10	198,000	June 1890 .10
47	Con. Silver, s.	Mo...	2,500,000	250,000	5		
48	Cordova Union, g.	Cal..	1,000,000	200,000	10		
49	Crescent, s. L.	Colo..	3,000,000	300,000	100	*	
50	Crocker, s.	Ariz..	10,000,000	100,000	1	165,000	Aug. 1892 .05
51	Crowell, G.	N. C..	500,000	500,000	1		
52	Dahlonega, G.	Ga..	250,000	250,000	10	*	
53	Dandy, s.	Colo..	5,000,000	500,000			
54	Decatur s.	Colo..	1,500,000	300,000			

DIVIDEND-PAYING MINES.

	Name and Location of Company.		Capital Stock.	Shares. No.	Shares. Par	Assessments. Total Levied	Assessments. Date and amount of last.			Dividends. Total paid.	Dividends. Date & amount of last.		
55	Derbee B. Grav., G...	Cal..	10,000 00	100,000	0	100,000	ept,	1892	.10	60,300	Aug..	1891	.10
56	Dexter, g. s.....	Nev..	1,000,000	100,000	10	.....	.....	.....	.....	80,000	Aug..	1892	.25
57	Dunkin, s. L...	Colo..	5,000,000	200,00	25	*	.....	.....	.....	390,000	Oct..	1889	.05
58	Elkhorn, s. L...	Mont.	1,000,000	200 00	5	*	.....	.....	.....	1,038,670	June	1892	37½
59	Enterprise, s.	Colo..	2,500,000	500,000	5	*	.....	.....	.....	850,000	May.	1893	.05
60	Eureka Con., s. L.. G.	Nev...	1,000,000	50,000	100	550,000	June	1889	.50	5,017,500	Jan..	1892	.25
61	Evening Star, s. L...	Colo..	500,000	50,000	10	*	.....	.....	.....	1,450,000	Dec..	1889	.2
62	Father de Smet, G...	Dak..	10,000,000	100,000	100	200,000	Nov..	1878	1.00	1,125,000	Dec..	1885	.20
63	Franklin, c..	Mich..	1,000,000	40,000	25	220,000	June	1871	.....	1,100,000	July	1892	2.00
64	Freeland, s. G.....	Colo..	5,000,00	200,000	25	*	.....	.....	.....	190,000	July.	1886	.10
65	Garfield Lt., G. S....	Nev..	500,000	100,000	5	.....	.....	.....	.....	90,000	April	1888	.12½
66	Glengarry	Mont.	1,000,000	100,000	10	.....	.....	.....	.....	10,000	June	1891	.10
67	Gold Rock.....	Colo..	500,000	500,000	1	.....	.....	.....	.....	.....	Dec..	1891	.01
68	Golden Reward. . .	S.Dak	1,250,000	250,000	5	.....	.....	.....	.....	85,000	April	1893	.02
69	Gould & Curry, s. G..	Nev...	10,800,000	108,000	100	4,591,200	June	1892	.25	3,826,800	Oct..	1870	10.00
70	Grand Prize, s.....	Nev...	10,000,000	100,000	100	785,000	Jan..	1890	.30	495,000	Mar.	1884	.25
71	Granite, s. L.....	Idaho	500,000	500,000	1	*	.....	.....	.....	83,400	Nov.	1890	.02
72	Granite Mountain. s.	Mont.	10,000,000	400,000	25	.....	.....	.....	.....	12,120,000	July.	1892	.20
73	Great Western, L. Q..	Cal...	5,000,000	50,000	100	.....	.....	.....	.....	444,861	May.	1893	.25
74	Green Mountain, G..	Cal...	1,250,000	125,000	10	*	.....	.....	.....	212,000	Nov.	1881	.07½
75	Hale & Norcross, G. S.	Nev...	11,200,000	112,000	100	5,534,800	Aug.	1892	.50	1,822,000	Aug.	1888	.50
76	Hecla Con., s. G. L. C.	Mont.	1,500,000	90,000	50	*	.....	.....	.....	1,980,000	Apr.	1893	.50
77	Hel'a Mg.& Red,s.L.G.	Mont.	3,315,000	663,000	5	*	.....	.....	.....	197,970	July.	1884	.06
78	Helena & Frisco, s.L.	Idaho	2,500,000	500,000	5	.....	.....	.....	.....	170,000	July.	891	.02
79	Helena & Victor.....	Mont.	1,000,000	200,000	5	.....	.....	.....	.....	80,000	May.	1892	.05
80	***Holmes, s.....	Nev...	10,000,000	100,000	100	370,000	May.	1890	.25	75,000	Apr.	1886	.25
81	Homestake, G.....	Dak..	12,500,000	125,000	100	200,000	July.	1878	1.00	5,008,750	June	1893	.10
82	Honorine, s. L.....	Utah.	500,000	250,000	2	37,500	April	1889	.05	125,000	Sep.	1887	.05
83	Hope, s.....	Mont.	1,000,000	100,000	10	*	.....	.....	.....	458,252	May	1893	.25
84	Horn-Silver, s. L....	Utah.	10,000,000	400,000	25	*	.....	.....	.....	4,700,000	Mar.	1893	.12½
85	Hubert, G.....	Colo..	1,000,000	1,000,000	1	*	.....	.....	.....	247,000	Dec.	1889	.00½
86	Idaho, G.....	Cal...	310,000	3,100	100	*	.....	.....	.....	5,450,250	April	1893	2.50
87	Illinois, s.....	N. M..	100,000	100,000	1	.....	.....	.....	.....	45,000	April	1889	.20
88	Iron Hill, s.....	Dak..	2,500,000	250,000	10	134,000	July.	1889	.03	156,250	Nov..	1887	.07½
89	Iron Mountain, s....	Mont.	5,000,000	500,000	10	*	.....	.....	.....	230,000	June	1893	.05
90	Iron-Silver, s. L.....	Colo..	10,000,000	500,000	20	*	.....	.....	.....	2,500,000	April	1893	.20
91	Jack Rabbit, G.....	Cal...	10,000,000	100,000	100	100,000	Sept.	1892	.10	260,000	Aug.	1891	.10
92	Jackson, G. S..... ..	Nev..	5,000,000	50,000	100	237,500	Nov..	1886	.20	60,000	Jan.	1891	.10
93	Kearsarge, C.....	Mich..	1,000,000	40,000	25	190,000	Oct..	1887	1.00	80,000	Jan.	1890	2.00
94	Kennedy	Cal...	10,000,000	100,000	100	.....	.....	.....	.....	387,000	May..	1892	.15
95	Kentuck, s. G.....	Nev..	3,000,000	30,000	100	454,180	Oct..	1891	.15	1,350,000	Dec.	1886	.10
96	La Plata, s. L.... ...	Colo..	2,000,000	200,000	10	*	.....	.....	.....	610,000	Sept.	1882	.30
97	Leadville Con., s. L..	Colo..	4,000,000	400,000	10	*	.....	.....	.....	316,500	Fe b..	1892	.03
98	Lexington, G. S..	Mont.	4,000,000	40,000	100	*	.....	.....	.....	609,000	Jan..	1890	2.00
99	Little Chief, s. L....	Colo..	10,000,000	200,000	50	*	.....	.....	.....	820,000	Dec..	1890	.05
100	Little Rule, s.....	Colo..	500,000	500,000	1	.....	.....	.....	.....	220,000	Dec..	1891	.02
101	Maid of Erin.....	Colo..	3,000,000	600,000	5	.....	.....	.....	.....	708,900	April	1893	.25
102	Mammoth, s. L. C....	Utah.	10,000,000	400,000	250	110,000	.....	1882	.25	1,040,000	Dec...	1891	.10
103	Martin White, s.....	Nev.	10,000,000	100,000	100	1,275,000	Jan..	1892	.25	140,000	Dec..	1886	.25
104	Mary Murphy, s. G...	Colo.	350,000	3,500	101	*	.....	.....	.....	175,000	May..	1885	5.00
105	Matchless, s. L	Colo.	500,000	500,000	1	*	.....	.....	.....	15,000	Feb...	1890	.00½
106	Maxfield	Utah	3,000,000	300,000	10	.....	.....	.....	.....	117,000	April	1892	.03
107	Mayflower, D. gravel	Cal...	1,000,000	100,000	10	.....	.....	.....	.....	140,000	May.	1893	.10
108	May Mazeppa, s. L...	Colo..	1,000,000	100,000	1	.....	.....	.....	.....	205,000	Oct..	1891	.03½
109	Minas Prietas, G. S...	Mex..	1,000,000	100,000	10	*	.....	.....	.....	350,000	Dec..	1890	.50
110	Minnesota, C.....	Mich..	1,000,000	40,000	25	420,000	April	1886	1.00	1,820,000	Mar.	1876	.....
111	Mollie Gibson, s....	Colo..	5,000,000	1,000,000	5	.....	.....	.....	.....	3,600,000	June.	1893	15
112	Monitor, G.....	S.Dak	2,500,000	250,000	10	.....	.....	.....	.....	45,000	Oct..	1890	.03
113	Mono, G.....	Cal...	5,000,000	50,000	100	760,000	Sept.	1890	.25	12,500	Mar..	1886	.25
114	Montana, Lt., G. S....	Mont.	3,300,000	660,000	5	*	.....	.....	.....	2,619,075	June.	1891	12½
115	Morning Star, s. L...	Colo..	1,000,000	100,000	10	.....	.....	.....	.....	925,000	April	1891	.25
116	Morning Star Drift,G	Cal...	240,000	2,400	100	.....	.....	.....	.....	140,600	April	1893	3.00
117	Moulton, s. G.....	Mont.	2,000,000	400,000	5	*	.....	.....	.....	410,000	Nov.	1892	.07½
118	Mt. Diablo, s.....	Nev..	5,000,000	50,000	100	137,500	June	1880	2.00	210,000	July.	1891	.20
119	Napa, Q.....	Cal...	700,000	100,000	7	.....	.....	.....	.....	580,000	July	1893	.20
120	Navajo, G. S..... ..	Nev..	10,000,000	100,000	100	520,000	May.	1891	20	229,950	April	1889	.10
121	Newton.....	Cal...	10,000,000	100,000	100	*	.....	.....	.....	10,000	May..	1891	.05
122	New California, G....	Colo..	800,000	160,000	5	*	.....	.....	.....	48,800	May..	1890	.12½
123	New Guston, s.....	Colo..	550,000	110,000	5	.....	.....	.....	.....	1,877,500	April	1892	.75
124	North Banner Con..	Cal...	1,000,000	100,000	10	.....	.....	.....	.....	20,000	July..	1891	.05
125	North Commonw'th	Nev...	10,000,000	100,000	10	.....	.....	.....	.....	25,000	June.	1891	.25
126	N. Hoover Hill, G. S..	N. C..	300,000	120,000	2½	*	.....	.....	.....	30,000	Dec..	1885	.06½
127	North Belle Isle, s...	Nev..	10,000,000	100,000	100	474,689	Nov.	1892	.10	230,000	May .	1888	.50
128	North Star, G.....	Cal..	1,000,000	100,000	10	.....	.....	.....	.....	450,000	June	1893	.50
129	Omaha Cons., G.....	Cal...	2,400,000	24,000	100	.....	.....	.....	.....	30,000	May..	1892	.15
130	Ontario, s. L.....	Utah	15,000,000	150,000	100	.....	.....	.....	.....	13,175,000	Oct..	1892	.50
131	Ophir, G. S.....	Nev..	10,000,000	100,000	100	4,210,640	April	1890	.50	1,595,800	Jan..	1892	.05
132	Original, s. C.....	Mont.	1,500,000	60,000	25	*	.....	.....	.....	135,000	Jan..	1889	.05
133	Oro, s. L. G.....	Colo..	500,000	100,000	5	.....	.....	.....	.....	95,000	July.	1890	.20
134	Osceola, C..	Mich..	1,250,000	50,000	25	480,000	April	1876	1.60	1,747,500	May.	1893	1.00
135	Pacific Coast, s.....	Cal...	1,500,000	15,000	100	.....	.....	.....	.....	860,000	Dec.	1892	1.00
136	Parrot, C.....	Mont.	1,800,000	180,000	10	.....	.....	.....	.....	1,748,000	April	1893	.10
137	Petro.....	Utah	10,000,000	10,000	100	.....	.....	.....	.....	17,500	July	1891	.75
138	Plumas Eureka, G....	Cal...	1,406,250	140,625	10	*	.....	.....	.....	2,669,926	April	1893	.19
139	Plymouth Con , G....	Cal...	5,000,000	100,000	50	*	.....	.....	.....	2,280,000	Feb.	1888	.40
140	Poorman, G. S.....	Idaho	375,000	300,000	125	*	.....	.....	.....	68,260	Sept	1892	.....
141	Quicksilver, pref., Q.	Cal...	4,300,000	43,000	100	.....	.....	.....	.....	1,823,911	June	1891	1.25
142	" com., Q	Cal...	5,700,000	57,000	100	.....	.....	.....	.....	643 867	July.	1892	.40
143	Quincy, C....	Mich..	1,250,000	50,000	25	200,000	Dec..	1862	.....	6,470,000	Feb.	1893	3.00
144	Red Cloud.....	Idaho	1,000,000	200,000	5	*	.....	.....	.....	153,100	Dec.	1892	.10
145	Reed National, s. G..	Colo..	500,000	500,000	1	.....	.....	.....	.....	50,000	Dec..	1890	.01
146	Retriever, L....	S.Dak	1,250,000	250,000	5	.....	.....	.....	.....	20,000	Aug..	1891	.03
147	Rialto, G.....	Colo..	300,000	300,000	1	*	.....	.....	.....	50,250	April	1892	.01½
148	Richmond, s. L.....	Nev..	1,350,000	54,000	25	*	.....	.....	.....	4,346,325	Aug..	1891	.25
149	Rico-Aspen.....	Colo..	5,000,000	1,000,000	5	.....	.....	.....	.....	25,000	May.	1893	.02½
150	Ridge, C....	Mich..	500,000	20,000	25	219,939	Mar.	1886	50	99,785	Feb.	1880	.50
151	Robinson Con., s. L..	Colo..	10,000,000	200,000	50	*	.....	.....	.....	585,000	Mar.	1886	.05
152	Running Lode, G....	Colo..	1,000,000	1,000,000	1	*	.....	.....	.....	36,000	May.	1892	.00 1-10
153	Savage, s.....	Nev..	11,200,000	112,000	100	6,772,000	Feb..	1892	.50	4,460,000	June	1889	3.00
154	Sberidan, s. G.....	Colo..	300,000	3,000	100	*	.....	.....	.....	300,000	Oct..	1891	2.50
155	Shoshone, G.....	Idaho	150,000	150,000	1	.....	.....	.....	.....	7,500	April	1883	.01
156	Sierra Buttes, G.....	Cal...	2,225,000	122,500	10	.....	.....	.....	.....	1,544,620	April	1893	.12½
157	Sierra Nevada, s. G..	Nev..	10,000,000	100,000	100	6,411,910	June	1892	.25	102,000	Jan..	1871	1.00
158	Sierra Nevada, s. L..	Idaho	1,000,000	1,000,000	1	*	.....	.....	.....	40,000	May..	1889	.02
159	Silent Friend.....	Colo..	500,000	500,000	1	.....	.....	.....	.....	60,000	Aug..	1891	.02½
160	Silver Cord, s. L. G....	Colo.	4,500,000	450,000	10	.....	.....	.....	.....	265,000	April	1889	.10
161	Silver King, s.....	Ariz..	10,000,000	100,000	100	130,000	Nov.	1890	.30	1,950,000	July	1887	.25
162	Silver Mg.of L.V.,s.L.	N. M..	500,009	500,000	1	.....	.....	.....	.....	300,000	Dec..	1891	4.05
163	Slide.....	Colo..	500,000	5,000	100	.....	.....	.....	.....	20,000	Nov..	1891	4.00
164	Small Hopes Con., s.	Colo..	5,000,000	250,000	20	*	.....	.....	.....	32,000	Nov..	.....	.15
165	Spring Valley, G.....	Cal...	200,000	200,000	1	50,000	Oct.	1886	.25	50,000	Jan..	1891	.25
166	Standard, G. S.....	Cal...	10,000,000	100,000	100	100,000	June	89	.50	3,655,000	July.	1893	.10
167	Stormont, s.....	Utah.	500,000	500,000	1	*	.....	.....	.....	155,000	Nov	1881	.05
168	St. Joseph, L....	Mo...	1,500,000	150,000	10	*	.....	.....	.....	1,974,000	Dec..	1890	.02
169	Swansea, g. s.....	Colo..	600,000	60,000	10	.....	.....	.....	.....	27,000	Mar.	1893	.10
170	Tamarack, C.....	Mich..	1,250,000	50,000	25	520,000	Aug.	345	3.00	3,160,000	Oct..	1892	.00
171	Teal & Poe.....	N. M.	150,000	150,000	1	.....	.....	.....	.....	9,000	Nov.	1891	.01½
172	Tombstone, G. S. L..	Ariz..	12,500,000	500,000	25	*	.....	.....	.....	1,250,000	April	1882	.10
173	Trinity Riv'r Hydr.,G	Colo..	500,000	500,000	1	*	.....	.....	.....	10,000	May.	1893	.00½
174	United Verde, C... ..	Ariz..	3,000,000	300,000	10	*	.....	.....	.....	207,500	Jan..	1892	.10
175	Victor, G...	Colo..	1,000,000	200,000	5	.....	.....	.....	.....	40,000	June	1892	.05
176	Viola Lt., s. L.....	Idaho	750,000	150,000	5	...	.....	.....	.....	337,500	Nov.	1888	.37½
177	Ward Con., s.....	Colo.	2,000,000	200,000	10	.....	.....	.....	.....	20,000	Dec..	1889	.05
178	Woodside, s. L..... ..	Utah	100,000	100,000	10	.....	.....	.....	.....	25,000	Oct..	1889	.25
179	W. Y. O. D.	Cal..	30,000	15,000	4	22,500	May.	1891	.10	54,000	April	1893	.10
180	Yankee Girl, s.....	Colo.	1,300,000	260,000	5	.....	.....	.....	.....	1,405,000	April	1891	1.50
181	Yellow Jacket, G. S..	Nev..	12,000,000	120,000	100	5,808,000	Sept.	1892	.25	2,184,000	Aug.	1871	1.50
182	Yosemite No. 2.....	Utah.	1,000,000	100,000	10	.....	.....	.....	.....	25,000	Oct..	1891	.05
183	Young America, G....	Cal...	.....	.....	.....	.....	.....	.....	.....	175,000	Jan..	1889	1.00
..	....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

COAL AND COAL RAILROAD STOCKS.

NAMES OF STOCKS.	July 1. H.	July 1. L.	July 3. H.	July 3. L.	July 4. H.	July 4. L.	July 5. H.	July 5. L.	July 6. H.	July 6. L.	July 7. H.	July 7. L.	Sales.
Am Coal							72		73	72⅝	73⅛	73	1,423
Balt. & Ohio													
do. pref							31½						100
do. pref													
Cambria Iron													
Ches. & Ohio	18⅜	18¼	18	17¾			17⅝	17	17⅜	17¼	17⅛		2,330
do. 1st pref													
do 2d pref													
Col. C. & I	12½												150
Col. Coal													
Colorado Fuel	38								36		37⅛	37	500
do. pref													
Col., H V.& Tol.	20¾		19				19⅛		19¼	18¼	18¾		1,145
do. pfd													
Col. & H. Coal	8												200
do. pfd													
Cons. Coal													
Del. & Hud. C	120⅝	120	120¾	119⅝			120⅜	120	120		121		1,659
Del., L. & West.	147⅛	145⅛	146¼	144½			144¾	143¾	144¾	143¾	145	144¾	6,280
Hunt. & B.Top.	35⅝	35¼							35				160
do. pref	50¼	50	50⅛										379
Lake Erie&Wes											16¾	16¼	525
do. pref	70½						70		69		70		820
Lehigh C. & N.	49¾		49⅞	49¾			50	49⅞	50	49⅝			415
Lehigh Valley	41	40¾	40⅝	40⅜			40¾		40¾	40⅝			2,890
Maryland Coal													
do. pref													
Morris & Essex			142⅛	141½			142½		142½				113
New Cent. Coal													
N. J. Central	104⅜	103	103⅝				103	101½	101¼		104	102	2,54
N. Y., L. & W													
N. Y., L. E.& W	17⅜	16½	16¼	15¾			16⅜	15⅝	16¼	16	16⅜	16⅛	9,028
do. pref	34										34		200
N.Y., Susq. & W	13⅛		13½				13	12¾	13¼	13	13¼	13	1,065
do. pref													
N. & West													
do. pref													
Penn. Coal													
Penn. R. R	51	50¾	50¼	50¼			50¾	50¾	50¾	50¾			4,070
Phil. & Reading	14¾	14¼	14⅜	13¾			14½	13¾	15	14¼	14⅞	14⅜	37,580
Penn. C. & I	16⅜	15⅛	15¾				15½	15¼	15½	15¼	15⅜		1,710
do. pref													
Wheel. & L. E	13½	12¾	13⅜	12¾			13¼						1,050
do. pref	47						49½		50¼				300

Total shares sold, 76,673.

INDUSTRIAL AND TRUST STOCKS.

NAME OF STOCKS.	July 1. H.	July 1. L.	July 3. H.	July 3. L.	July 4. H.	July 4. L.	July 5. H.	July 5. L.	July 6. H.	July 6. L.	July 7. H.	July 7. L.	SALES.
Adams Express							150						20
Am. Cotton Oil	35⅜	35	35	34½			35	33½	33	32	33		3,660
do. pref									66¼	66			305
Am. Dist. Tel													
Am. Express	111						110½		110				147
Am. Sugar Ref	85¾	83⅜	83½	82⅛			83	80¾	82¼	80⅝	82¾	81¾	43,118
do. pref	82¾	82½	82	81¼			81¾	81¼	80½	80	81¾		2,059
Edison E. Ill. Co.			10 3/4				106	105	105¼				5
Edison Gen. El	72½	71¼	71½	70½			71⅞	70½	71¾	69¼	72	71⅛	32,243
Nat. Cord. Co	11		10½				10¾	10½	10½	8⅛	8⅛	7¼	13,344
do. pref							42	41½	41	40	39¾		943
do. New													
Nat. Lead Co	31	30⅛	29¾	29¼			29½	29¼	29¼	29¼	30⅛	30	6,568
do. pref	68		69				67¾	67					582
Nat. Linseed Oil	21		21⅛						21		21		800
So. Cotton Oil													
U. S. Express	54						54						15
U. S. Rubber							36						100
do. pref	74		77	75									104
Wells, Fargo Ex			140				140						18
Western Union	83	81⅞	82¼	81⅜			81⅝	80¾	81¼	80⅜	81¾	81	24,700

Total sales, 128,832.

CALIFORNIA.

San Francisco.

NAMES OF STOCKS.	CLOSING QUOTATIONS. June 30.	July 1	July 3	July 4	July 5.	July 6.
Alpha						
Alta	.10				.10	.10
Belcher	.60				.45	.35
Belle Isle	.10				.10	
B. & Belch	.40					.40
Bodie	.60				.10	.15
Bulwer	.15					.10
Challar					1.45	.35
Com'w'ith						
Con.C.&V.	1.00				.45	1.30
Con. Pac.	.50					
Crown Pt.	.25				.30	.20
Del Monte						
E'rekaCon	.10				.45	
G'ld & C'y	.45				.45	.35
Hale & N.	.30				.25	.25
M. White						
Mexican	.75				.70	.50
Mono	.10				.10	.0
Mt. Diablo						
Navajo	.10				.05	
Nev. Qu'n.	.05				.05	
N.B'lleIsle					1.15	
N. Co'w'th						
Ophir	1.20				1.15	.95
Potosi	.95				.90	.65
Savage	.40				.40	.25
Sierra Nev	.60				.55	.50
Uni'n Con	.60					.40
Utah					.90	
Yel. Jack	.95				.90	.65

COLORADO.

Aspen.

	Bid.	July 1. Asked
Argentum Juniata	$0.63	$0.70
Aspen Contact	1.10	1.12
Aspen Deep Mining	.11	.11½
Best Friend	.07½	.08
Bi-Metallic	.07½	.08
Bushwacker	.14	.15
Delia S	1.90	2.00
Gold Valley Placer	.20	.20
Little Annie	.07½	.08
Mollie Gibson	5.50	6.00
Pontiac	.09	.09½
Smuggler	35.00	38.00
St. Joe & Mineral Farm	.10½	.11
U. S. Paymaster		

Colorado Springs.

	Bid.	July 1. Asked.
Anaconda Gold	.22	.25
Calumet	.03	.03½
Cleopatra		.03½
Fanny Rawlins	.07	.07½
Gold & Globe		
Gold King		
Isabella	.14	.15½
Jack Pot		
Jeff Davis		
Lemhi	.70	.80
Matoa		
Ophir		
Orphan Bell		
Pharmacist	.20	.21
Summit M. & M		
Work	.02¼	.03
World	.02	.02½

Denver.

Prices and sales for the week ending June 3d:

	High.	Low.	Sales.
Anaconda	$.30½	$.30	3,500
Bangkok-Cora Belle	.04	.04	100
Diamond B	.02¾	.02½	2,900
Gold Rock	.03½	.03½	100
Justice	.01½	.01½	3,700
Puzzler	.06½	.06½	200
Work	.04¼	.04	8,0.0
Total sales			18,500

Rico. June 3.

Atlantic Cable Cons. M. Co	$0.25
Atlantic Cable guaranteed	.70
Enterprise Mining Co	3.25
Iron Dollar Silver Mines Co	.25
Southern Cons. Treasury Stock	.15
Uncle Ned Co	.15

MARYLAND.

Baltimore.

COMPANY.	Bid.	July 6. Asked.
Balt. & N. C		
Conrad Hill		
Cons. Coal		$0.31
Diamond Tunnel		.15
George's Creek Coal		1.10
Howard C. & C	$1.10	
Lake Chrome		
Silver Valley	.03@.04	.06@.08

MINNESOTA.

Duluth. June 30.

LISTED STOCKS.

	Par.	Bid.	Asked
Biwabik M. Iron Co	100	$18.00	$20.00
Cincinnati Iron Co	25	.30	.45
Clark Iron Co	100	.40	.55
Cosmopolitan Iron Co			
Great Northern Min. Co	100	2.50	3.00
Kanawha Iron Co	100	.25	.30
Keystone Iron Co			.40
Lake Superior Iron Co	25	1.00	2.50
Lincoln Iron Co		.10	.50
Little Mesaba Iron Co	100		
Mesaba Moun. Iron Co	100	9.75	12 00
Minneapolis Iron Co	100	.10	.20
Mountain Iron Co	100		45.00
Shaw Iron Co	100	1.00	1.50
Security Land & Exp. Co.	10	15.00	18.00
Washington Iron Co	100		

UNLISTED STOCKS.

Adams Iron Co		6.00	11.00
Agate Copper Mining Co			.45
Allegheny Iron Co	10		
Aurora Iron Co			
Buckeye Iron Co	100		2.50
Buffalo Land & Exp. Co			.65
Camden Iron Co			.25
Chandler Iron Co			50.00
Chicago Iron Co	100	.20	.50
Charlestoa Iron Co	100	.25	.45
Champion Iron Co	100	.20	.45
Cleveland Iron Co			
Columbia Iron Co	100		
Commodore Mining Co			
Comstock Iron Co	100		
Dayton Iron Co	100		
Detroit Iron Co	25	.02	.03
Elmira Land & Iron Co			.25
Great Western Mining Co	100	1.25	1.50
Hall Iron Co			
Homestead Iron Co	25	.01	.03
Horton Mining Co	10		
Imp. Iron Mt. Mining Co			
Internat'l Development			22.50
Kakina Iron Co	25		
Kentucky Iron Co	100		
Lackawanna Iron Co	100	.40	1.00
Macomber Mining Co			
McCaskill Mining Co		.02	.05
McKinley Iron Co	100		23.50
Mesaba Chief Iron Co	100	2.00	2.50
Mesaba Iron Co			.20
Mesaba Mineral Co			.75
Minnesota Iron Co		65.00	
Myrna Iron Co	10		
Northern Light Iron Co	100		.25
New England Iron Co	100		
Ohio Mining Co	100		6.00
Oneota Iron Co	100		
Ophir, gold		1.40	1.50
Pennsylvania I. & S. Co	100	.10	.15
Pioneer			1.00
Putnam			.80
Rouchleau Iron Co	100	.30	.50
Republic Iron Co	25		.40
Red Hematite Iron Co	100		.15
Standard Ore Co	25	.25	.50
Stowell Iron Co			.10
Towanda Iron Co	100	1.50	2.00
Ver. & Mesaba Iron Co			1.00
Zenith Iron Co	25	1.25	2.75

MISSOURI.

St. Louis. June 28.

Closing quotations:

	Bid.	Asked.
Adams	$0.50	$1.00
American & Nettie, Colo	.35	.37½
Bi-Metallic, Mont		4.50
Elizabeth, Mont		.38¾
Granite Mountain, Mont	2.15	2.55
Hope	3.80	4.00
Leo		.06
Pat Murphy		
Small Hopes		.60

MONTANA.

Helena.

Prices for the week ending July 1:

	Bid	Asked.
Bald Butte (Mont.)	$2.00	$2.50
Benton Group (Neihart), Mont	.15	.20
Combination(Phillipsb'g),Mont		
Cumberland (Castle), Mont		
Elizabeth (Phillipsb'g), Mont		
Florence (Neihart)		
Helena & Victor, Mont		
Iron Mountain(Missoula),Mont	.50	.60
Piegan (Marysville), Mont	.25	.50
Georman (Cœur d'Alene),Idaho	.50	.75
Whitlach Union & MacIntyre	.30	.40
Yellowstone		

(Special report by SAM'L K. DAVIS.)

PENNSYLVANIA.

Philadelphia.

	Bid.	July 6. Asked.
Bloomington C. & C		
Buck Mountain C		
Cambria	64	65@70
Connellsville Gas Co		
Edison E. Light Co	116½@117	119
Excelsior B. & S		
Locust Mt. C. & I		
Penn. Salt		103
Penn. Steel	55	65
Penn. Gas Coal	47	
Royal Gas		
Westmoreland C	65½@65¾	

Pittsburg. July 5.

	Bid.	Asked.
Bridgewater Gas Co	$31.50	
Chartiers Val. Gas		$10.00
Enterprise Mining Co	1.00	1.50
Hidalgo Mining Co	1.75	
La Noria Mining Co	8.50	
Luster Mining Co	8.13	9.00
Manufacturers' Gas	29.00	30.00
N Y. & Clev. G. C		51.00
Pennsylvania Gas	8.00	9.00
People's N. G. & P. Co	13.75	14.50
Philadelphia Co	18.38	18.50
South Side Gas		
Tuna Oil		
Wheeling Gas Co	18.00	19.25
W'house Air Brake Co		127.00

London Quotations.

	June 28. 1893. Buyer. £ s. d.	Seller. £ s. d.
Alaska Treadwell,		
Alaska Ter	1 15 0	2 0 0
Almada & Tirito, Mex.	3	9
American Belle, Colo.	2 3	2 9
Big Creek, Nev	7 6	12 6
De Lamar, Idaho	18 9	1 1 3
Elkhorn, Mont	14 6	15 6
Emma, Utah	9	1 0
Flagstaff, Utah	7½	10½
Golden Feather, Cal	14 6	15 6
Golden Gate, Cal	4 6	5 6
Golden Leaf, Mont. & N. M	6	9
Holcomb Valley, Cal.	11	1 1
Jay Hawk & Lone Pine, Mont	7 6	8 6
Maid of Erin, Colo	7 6	10 0
Mammoth Gold, Ariz.	6	1 0
Mesquital del Oro, Mex, P	3 0 0	4 0 0
Mesquital del Oro, Mex., D	15 0	1 5 0
Mount McClellan, Colo	3 0	4 0
New Eberhardt, Nev		3
New Guston Colo	11 3	12 6
New Montana, Mont.	3 6	4 0
Pacific	5 0	7 0
Palmarejo, Mex	6	1 0
Pinos Altos, Mex	1 0	1 6
Poorman, Idaho	8 0	8 6
Rajah Gold, Can	6 3	8 9
Richmond Con Nev.	6 3	8 9
Seven Stars, Ariz	1 5 0	1 10 0
Sierra Buttes, Cal	6 0	8 0
" " Plumas Eur., Cal	7 0	9 0
South Poorman, Idaho	1 5 0	1 7 6
Springdale Gold, Colo.	3 3	3 9
United Mexican, Mex.	2 0	3 0
Yankee Girl, Colo	9	1 0

Paris. June 22.

	francs.
Belmez, Spain	665.00
Golden River, Cal	130.00
" " parts	30.00
Laurium, Greece	630.00
Lexington, Mont	82.50
" parts	2 00
Nickel, New Caledonia	735.00
Rio Tinto, Spain	372.50
" " oblig	530.00
" " " 2d	53?.00
Tharsis, Spain	118 75
Vieille-Montagne, Belgium	485.00

New York Mining Stocks.

(Latest quotations.)

	July 7. Bid.	Asked.
Alice		$0.40
Alta	$0 10	
Belcher	.65	
Best & Belcher	.50	.75
Bodie	.10	
Breece	.15	.20
Brunswick		
Bulwer	.10	
Caledonia, B. H		
Carth Creek		
Challar	.60	.85
Chrysolite	1.12	
Comstock Tunnel	.06	.09
Colo. Central		.07
Con. C. & Va	1.50	
Crown Point	.45	.75
Deadwood		
El Cristo		.35
Enterprise		
Gould & Curry	.45	.75
Hale & Nor	.30	
Horn Silver	2.25	2.50
Iron Silver		.45
Kingston & Pem		
La Crosse	.03	.05
Leadville	.14	
Little Chief	.15	
Mexican	.70	.90
Mono	.10	
Ophir	1.15	
Phœnix of Ariz		.10
Plymouth		1.00
Savage	.40	
Sierre Nevada	.60	.85
Union	.55	.80
Yellow Jacket	.90	

ASSESSMENTS.

COMPANY.	No.	Dinqt. in office.	Day of sale.	Amt. per sh're
Alta, Nev	43	July 7	July 28	.15
Baltic Con., Cal.	4	June 29	July 15	.02
Best & Belcher	54	July 14	Aug. 4	.25
Con. New York	10	June 16	July 10	.10
Crocker, Nev	14	July 9	Aug. 3	.05
Crown Pt., Nev	61	July 18	Aug. 8	.25
Darboy, S. Dak	3	July 25	Aug. 14	.002
Derbec B. Gravel, Cal	11	July 5	July 27	.05
El Leopoldo, Mex	3	July 1	July 10	.05
Exchequer, Nev	36	Aug. 1	Aug. 29	.10
H'le&Nor., Nev	104	July 25	Aug. 18	.50
Justice, Nev	54	July 11	Aug. 2	.10
Lady Washington, Nev	9	July 11	Aug. 2	.10
Mt. George, Cal		July 1	July 22	.01
Occid'ntal, Nev	13	July 26	Aug. 17	.10
Peer, Nev	15	July 9	Aug. 2	.05
Red Jacket, Nev	1	July 15	Aug. 5	.05
Savage, Nev	81	July 25	Aug. 14	.25
Silver Hill, Nev	33	June 29	July 28	.05
Utah, Nev	18	July 8	Aug. 5	.10
Weldon, Ariz	7	July 16	Aug. 9	.05
Yosemite No. 2, Utah		Aug. 18	Sept. 5	.05